

This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

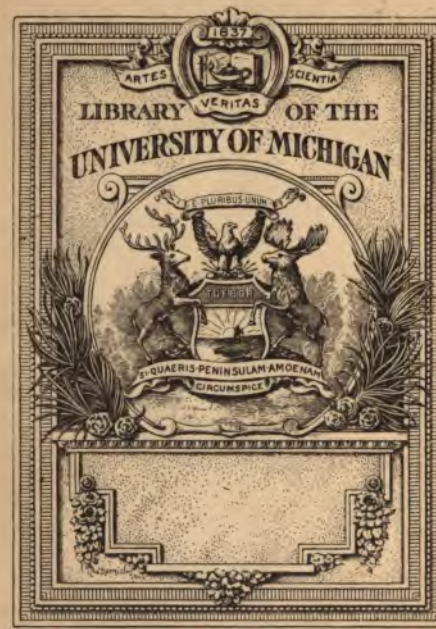
+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

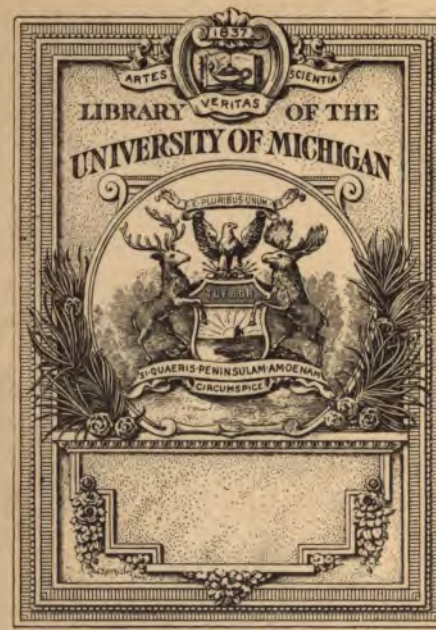
About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

A 439281



THE GIFT OF
Prof. F. N. Scott



THE GIFT OF
Prof. F. N. Scott



Introduction to the Herbartian Principles of Teaching

BY

CATHERINE I. DODD

Day Training Department, The Owens College, Manchester

"A race of real children; not too wise,
Too learned, or too good, . . .
Simplicity in habit, truth in speech,
Be these the daily strengtheners of their minds;
May books and Nature be their early joy.
And knowledge rightly honoured with that name—
Knowledge not purchased by the loss of power."

WORDSWORTH.

WITH AN INTRODUCTION BY PROFESSOR W. REIN (JENA)

London
SWAN SONNENSCHEIN & CO LIMITED
NEW YORK: THE MACMILLAN COMPANY
1901.

First Edition, September, 1898;
Second Edition (with a few corrections),
November, 1901.

Prelims 7-12-29 MKR

O I S 11 L.S.



DEDICATED TO

W.H.,

J.G., M.T., R.B., E.B.,

U.H., M.R.,

E.H., E.A.H., AND C.B.

PREFACE

"For two centuries Germany has been the classical land of pedagogy," says Compayré; if we admit this, it is not surprising to find the Germans ahead of us in educational theory.

In England, it has been the fashion to deprecate educational theory, though it cannot be denied that our practical ability in the schoolroom bears a favourable comparison with the practical ability of teachers of other nations.

Our educational text-books, in the past, have frequently been full of practical details, but lacking in guiding principles.

We are beginning to atone for our past neglect of educational theory, and to recognise that a study of principles and ideals of education is of greater importance than a study of the external devices employed by the teacher to make the child acquire knowledge. "The subject taught is secondary to the manner of teaching," and the question for the teacher is not, "What does the child know?" but, "What is his moral worth?"

Ethics and psychology, and their bearing upon teaching, are receiving increased attention in our training courses for teachers; it seems probable, therefore, that the writings of Herbart and his followers will be more studied in England than has been the case hitherto. Herbart believed

223593

that the scientific basis of education was to be found in ethics and psychology, and his system, which aims at developing character, and at the same time at providing teachers with principles for selecting, arranging, connecting, and teaching the ordinary subjects of the schoolroom, is worthy of our attention.

I have attempted in this little book to sketch simply and clearly some of Herbart's ideas on education, and to apply them to English primary schools. I have dedicated the book to the students, who helped me to work out the practical experiments in teaching herein described.

My warmest thanks are due to Professor Rein, of Jena, not only for writing the Introduction to the book, but also for much personal help and kindness in directing my studies, and in enabling me to see the Herbartian Methods worked out in German Schools. I am indebted to Mr. Arthur Sidgwick for the translation of Dr. Rein's Introduction.

CATHERINE I. DODD.

MANCHESTER,
June, 1898.

INTRODUCTION

By DR. W. REIN

ALL teachers have a natural anxiety to establish a system of instruction such as will develop the powers and feelings of the mind. But they are often unable to see clearly what lines to adopt, in order to attain, in dealing with the young, the end which they somewhat imperfectly discern. They frequently rely on the influence of their own personality, or on a certain traditional method, and neglect accordingly the proper organisation of their instruction. Personality, no doubt, is of the highest importance, if the teacher possesses the qualities necessary for true education. But even the best natural gifts can be still further developed and improved by systematic reflection, and study of the theory of education and its value in practice. For this purpose books are a welcome aid, to lead the thoughtful teacher through the intricate detail of instruction, and, above all, to show him how mechanical methods can be avoided, and teaching take its true place in true education.

The present work will undoubtedly render this service to English teachers. It introduces them to the problems of educational teaching, and supplies a potent stimulus to systematic thought on the best method of instruction, while it presents an independent estimate of the results attained by methodical work since the days of Comenius, Pestalozzi,

"The letter killeth, the spirit giveth life."—ST. PAUL.

"Obviously, the free enjoyment of life demands not only the noble, but also the pleasant, for happiness consists of these two."—ARISTOTLE.

"Dumb yearnings, hidden appetites, are ours;
And *they must* have their food. Our childhood sits,
Our simple childhood, sits upon a throne
That hath more power than all the elements."
—WORDSWORTH.

"Every philosopher of the present must go through Kant, and every pedagogue through Pestalozzi and Herbart."—REIN.

"Pestalozzi, seized and developed by the philosophic thought of our times, must be studied in Herbart."—MAGER.

"The teacher . . . creates his own school. To him who hears the true artist's call to education, the small dull space in which he at first perhaps feels himself confined soon becomes so bright and large, that he discovers the whole of education therein, with all its motives and needs; the satisfaction of which is truly a work immeasurable."—HERBART.

"The aim of education is, in truth, always an ideal aim, for it contemplates the completion of a man—the realisation in each man of what each has it in him to become. If a teacher has not an ideal aim, he had better take to shopkeeping at once; he will there, doubtless, find an ideal within his capacity."—LAURIE.

CONTENTS

CHAPTER I

PAGE

AIM AND GENERAL PRINCIPLES OF EDUCATION . . . 1

CHAPTER II

INTEREST, AND ITS BEARING UPON INSTRUCTION . . . 13

CHAPTER III

EXPERIENCE, INTERCOURSE, AND INSTRUCTION . . . 25

CHAPTER IV

SELECTION OF MATERIAL DETERMINED BY THE CULTURE EPOCHS 35

CHAPTER V

HUMANISTIC STUDIES 53

CHAPTER VI

NATURAL SCIENCE STUDIES 73

CHAPTER VII

ASSOCIATION OF STUDIES AND IMPORTANCE OF THOUGHT STUDIES 87

CHAPTER VIII

CONCENTRATION 103

CHAPTER IX

CONCENTRATION SCHEMES WORKED OUT 111

CHAPTER X

METHOD OF TEACHING. THEORY OF THE FORMAL STEPS . 123

CHAPTER XI

LESSONS WORKED OUT ACCORDING TO THIS THEORY . . 136

APPENDIX

HISTORIC SKETCH OF THE GROWTH OF HERBART'S INFLUENCE IN GERMANY 183

BIBLIOGRAPHY 197

"The letter killeth, the spirit giveth life."—ST. PAUL.

"Obviously, the free enjoyment of life demands not only the noble, but also the pleasant, for happiness consists of these two."—ARISTOTLE.

"Dumb yearnings, hidden appetites, are ours;
And *they must* have their food. Our childhood sits,
Our simple childhood, sits upon a throne
That hath more power than all the elements."
—WORDSWORTH.

"Every philosopher of the present must go through Kant, and every pedagogue through Pestalozzi and Herbart."—REIN.

"Pestalozzi, seized and developed by the philosophic thought of our times, must be studied in Herbart."—MAGER.

"The teacher . . . creates his own school. To him who hears the true artist's call to education, the small dull space in which he at first perhaps feels himself confined soon becomes so bright and large, that he discovers the whole of education therein, with all its motives and needs; the satisfaction of which is truly a work immeasurable."—HERBART.

"The aim of education is, in truth, always an ideal aim, for it contemplates the completion of a man—the realisation in each man of what each has it in him to become. If a teacher has not an ideal aim, he had better take to shopkeeping at once; he will there, doubtless, find an ideal within his capacity."—LAURIE.

CHAPTER I

AIM AND GENERAL PRINCIPLES OF EDUCATION

Democratic Ideal in Education.

THE problems of education are more interesting perhaps in the present day than at any other period in the world's history. The democratic ideal, which is a development of the Christian idea that all men are equal before God, demands that education should be the common inheritance of humanity. The old idea, that education is the exclusive possession of the rich and wellborn, has passed away, but with more generous ideals many new complications have arisen.

When learning was an expensive luxury, people prized it because they paid for it, and because it was unobtainable by the majority. Now, it is as common as the air we breathe and the water we drink, and, moreover, no option is left to the parent, for the law compels him to send his child to school: but the prevalence of much sluggish indifference and ignorance concerning the need of school learning shows that the democratic Christian ideal is far from realization.

In the exclusive days the problem of education was considered from an exclusive standpoint, and reformers like Locke and Rousseau took into account only the difficulty of dealing with one pupil. Their method was to shut up their solitary pupil, away from the contaminating influences of the world, to provide him with a tutor who was a marvel

of discretion and wisdom, and to show how under these circumstances they might work out their ideal of education.

Pestalozzi's Problem.

Pestalozzi sought to reform education on more generous lines. He aimed at the regeneration of mankind. He lived for years among beggars, in order to learn "how to make beggars live like men." He dealt with the poor and outcast, and strove by means of education to give these neglected children self-respect; and to raise them from moral degradation.

Pestalozzi's problem is ours. We do not deal with an exclusive few, but with the thousands of children from the mean streets and dark alleys of our great cities, with the children from the factory-towns of the North of England and the mining districts of the South of Wales, with the children from scattered villages and from fishing hamlets. Many indirect influences are at work to cause the wealthy and middle classes to educate their children, but, now that education is a common inheritance, we must endeavour to arouse a deep and vital interest in knowledge for its own sake. We hear many murmurs of discontent. The people who pay rates grumble at the expense of our schools, the parents who are deprived of the fruits of their children's labour during their school-years grumble at the injustice of it, and those who expect the schools to work miracles in our midst grumble at the uselessness and folly of attempting to educate everybody. We are told that our methods are mechanical, that the knowledge we wish to impart has no lasting influence on the children, who forget in one year what they have laboured to learn in six, and that blank ignorance is better than conceited incapacity. Some of these pessimistic accusations may be true. We are dealing

with human children, human teachers, and human managers, under human conditions. Our means of education are often faulty and ill-considered, and the results are naturally imperfect.

Difficulties of Present Schools

The difficulties are great. Large classes with an insufficient staff of teachers are too common to need comment. Moreover, the time-table is becoming more crowded. Singing, drawing, manual training, painting, gymnastics, cooking, chemistry, jostle each other for places in the curriculum. How can the jaded teacher, battling with a large class and half a dozen subjects, find time and energy for thinking out methods?

It is a difficult matter; yet the method must be also considered. In the face of so much confusion, we need more urgently, than we ever needed before, a scientific guide to show us what to teach, and how to teach it.

Before we discuss these points, however, we must consider why we educate children.

The Aims of Education.

A study of some of the educational systems of the past shows us that children have always been educated for what has been considered the most important affairs of life.

The Greeks excelled in Art and War: hence their education was mainly physical.

The Romans wished to produce Soldiers and Statesmen: therefore Military exercises, the Twelve Tables of Roman law, and oratory were studied.

The chief aim of education in the Middle Ages was to fit people for the life to come: hence it was almost wholly religious in character.

What is our educational aim now? We so

of discretion and wisdom, and to show how under these circumstances they might work out their ideal of education.

Pestalozzi's Problem.

Pestalozzi sought to reform education on more generous lines. He aimed at the regeneration of mankind. He lived for years among beggars, in order to learn "how to make beggars live like men." He dealt with the poor and outcast, and strove by means of education to give these neglected children self-respect; and to raise them from moral degradation.

Pestalozzi's problem is ours. We do not deal with an exclusive few, but with the thousands of children from the mean streets and dark alleys of our great cities, with the children from the factory-towns of the North of England and the mining districts of the South of Wales, with the children from scattered villages and from fishing hamlets. Many indirect influences are at work to cause the wealthy and middle classes to educate their children, but, now that education is a common inheritance, we must endeavour to arouse a deep and vital interest in knowledge for its own sake. We hear many murmurs of discontent. The people who pay rates grumble at the expense of our schools, the parents who are deprived of the fruits of their children's labour during their school-years grumble at the injustice of it, and those who expect the schools to work miracles in our midst grumble at the uselessness and folly of attempting to educate everybody. We are told that our methods are mechanical, that the knowledge we wish to impart has no lasting influence on the children, who forget in one year what they have laboured to learn in six, and that blank ignorance is better than conceited incapacity. Some of these pessimistic accusations may be true. We are dealing

with human children, human teachers, and human managers, under human conditions. Our means of education are often faulty and ill-considered, and the results are naturally imperfect.

Difficulties of Present Schools.

The difficulties are great. Large classes with an insufficient staff of teachers are too common to need comment. Moreover, the time-table is becoming more crowded. Singing, drawing, manual training, painting, gymnastics, cooking, chemistry, jostle each other for places in the curriculum. How can the jaded teacher, battling with a large class and half a dozen subjects, find time and energy for thinking out methods?

It is a difficult matter; yet the method must be also considered. In the face of so much confusion, we need more urgently, than we ever needed before, a scientific guide to show us what to teach, and how to teach it.

Before we discuss these points, however, we must consider why we educate children.

The Aims of Education.

A study of some of the educational systems of the past shows us that children have always been educated for what has been considered the most important affairs of life.

The Greeks excelled in Art and War: hence their education was mainly physical.

The Romans wished to produce Soldiers and Statesmen: therefore Military exercises, the Twelve Tables of Roman law, and oratory were studied.

The chief aim of education in the Middle Ages was to fit people for the life to come: hence it was almost wholly religious in character.

What is our educational aim now? We sometimes try

and Herbart. It is possible that in many quarters this attempt may be regarded with a certain scepticism, and it may appear a bold and futile undertaking to transplant Herbartian theories to English soil; but in any case it is an interesting experiment, which cannot fail to lead to profitable results. The questions of curriculum and educational method are so difficult that it is an advantage to study them from different sides. It will be clear that their solution, as attempted on Herbartian principles, deserves serious consideration, so far as it seems adapted to make the teaching in our schools really fruitful for the young. In any case, we must make up our minds to get rid of the assumption that the first object is to cram the learner's mind with the maximum amount of knowledge to be reproduced in examination. The higher aims must be clearly recognised, which are these: to awaken the activity of the faculties, to form the mental and moral judgment, and to give a genial warmth to instruction, which quickens into life the noblest growths of genuine human culture.

We welcome the present work as a valuable aid to the thoughtful teacher, who is not content with mechanical routine, but is resolved to undertake and pursue his professional task in the spirit of an artist. We hope that the book may be warmly received by all who really care for the instruction and education of the young.

W. REIN.

JENA,
May, 1898.

CONTENTS

CHAPTER I

PAGE

AIM AND GENERAL PRINCIPLES OF EDUCATION . . . 1

CHAPTER II

INTEREST, AND ITS BEARING UPON INSTRUCTION . . . 13

CHAPTER III

EXPERIENCE, INTERCOURSE, AND INSTRUCTION . . . 25

CHAPTER IV

SELECTION OF MATERIAL DETERMINED BY THE CULTURE EPOCHS 35

CHAPTER V

HUMANISTIC STUDIES 53

CHAPTER VI

NATURAL SCIENCE STUDIES 73

CHAPTER VII

ASSOCIATION OF STUDIES AND IMPORTANCE OF THOUGHT STUDIES 87

CHAPTER VIII

CONCENTRATION 103

CHAPTER IX

CONCENTRATION SCHEMES WORKED OUT 111

CHAPTER X

METHOD OF TEACHING. THEORY OF THE FORMAL STEPS . 123

CHAPTER XI

LESSONS WORKED OUT ACCORDING TO THIS THEORY . . 136

APPENDIX

HISTORIC SKETCH OF THE GROWTH OF HERBART'S INFLUENCE IN GERMANY 183

BIBLIOGRAPHY 197

and Herbart. It is possible that in many quarters this attempt may be regarded with a certain scepticism, and it may appear a bold and futile undertaking to transplant Herbartian theories to English soil; but in any case it is an interesting experiment, which cannot fail to lead to profitable results. The questions of curriculum and educational method are so difficult that it is an advantage to study them from different sides. It will be clear that their solution, as attempted on Herbartian principles, deserves serious consideration, so far as it seems adapted to make the teaching in our schools really fruitful for the young. In any case, we must make up our minds to get rid of the assumption that the first object is to cram the learner's mind with the maximum amount of knowledge to be reproduced in examination. The higher aims must be clearly recognised, which are these: to awaken the activity of the faculties, to form the mental and moral judgment, and to give a genial warmth to instruction, which quickens into life the noblest growths of genuine human culture.

We welcome the present work as a valuable aid to the thoughtful teacher, who is not content with mechanical routine, but is resolved to undertake and pursue his professional task in the spirit of an artist. We hope that the book may be warmly received by all who really care for the instruction and education of the young.

W. REIN.

JENA,
May, 1898.

CONTENTS

CHAPTER I

PAGE

AIM AND GENERAL PRINCIPLES OF EDUCATION . . . 1

CHAPTER II

INTEREST, AND ITS BEARING UPON INSTRUCTION . . . 13

CHAPTER III

EXPERIENCE, INTERCOURSE, AND INSTRUCTION 25

CHAPTER IV

SELECTION OF MATERIAL DETERMINED BY THE CULTURE EPOCHS 35

CHAPTER V

HUMANISTIC STUDIES 53

CHAPTER VI

NATURAL SCIENCE STUDIES 73

CHAPTER VII

ASSOCIATION OF STUDIES AND IMPORTANCE OF THOUGHT STUDIES 87

CHAPTER VIII

CONCENTRATION 103

CHAPTER IX

CONCENTRATION SCHEMES WORKED OUT 111

CHAPTER X

METHOD OF TEACHING. THEORY OF THE FORMAL STEPS . 123

CHAPTER XI

LESSONS WORKED OUT ACCORDING TO THIS THEORY . . 136

APPENDIX

HISTORIC SKETCH OF THE GROWTH OF HERBART'S INFLUENCE IN GERMANY 183

BIBLIOGRAPHY 197

in one subject with the related ideas gained in another. Most of us can recall our pleasure at discovering in our childhood such facts as that the river Nile of the story of Moses was identical with the river Nile in the map of Africa. It gave us the kind of intellectual joy we feel later when cosmos begins to shape itself out of the chaos of one's thoughts.

Herbart based his theory of the concentration of studies upon psychological grounds. His followers — especially Prof. Rein—have made it one of the leading principles in their application of Herbartian methods. He associates it closely with the aim of education.

It is the aim of concentration to closely associate related ideas, thereby securing that unity in the circle of thought which gives personal character stability and strength.

The centre of this scheme of concentration is what the Herbartians call the "Gesinnungs-stoff" (material which develops character). This material is obviously the Humanities, History, Literature, and Art.

3. *The Method of Imparting Knowledge.*

Before we can attempt to teach anything to children, we must know how ideas grow in their minds. Herbart and his followers studied the mental processes by which children take in ideas, and, with these laws to guide them, they worked out the theory of the Five Formal Steps.

We often talk of our particular *methods* of teaching, as though the mind could acquire knowledge in a dozen different ways and the teacher had the privilege of choosing in which way his pupil should get his ideas. There is only one true method, and that corresponds to the laws according to which the child's mind works. The old way

was to make children learn formulas, definitions and rules, and repeat them by rote. They learnt words in this way, often mere words with no ideas attached to them, and to use words without understanding them is "an intellectual immorality." The only way in which children can acquire ideas is by following the universal law by which all discoverers have arrived at their conclusions. To proceed from particulars to the general, and back again to the particular. The child studies individual cases and finally arrives at a general law; then he applies this general law to other cases. The theory of the Five Formal Steps is an expansion of this principle.

Our schools ought to be among the most elevating and purifying influences of the country; and perhaps, when teachers clearly recognise what to teach, and how to teach it, so that the instruction shall influence in the right direction the character of the children in our schools, the word education, which we now use loosely, will acquire a real and living meaning.

Archdeacon Wilson, in his recent charge, May, 1898, expresses the different meaning education has for those who are interested in fostering it. "Part of the price we pay for democracy is, that a subject like education gets largely into the hands of people who have of necessity an extremely limited and erroneous idea of what it means. They think of education in terms of its instrumentalities, the buildings, apparatus, staff, qualifications of teachers, and the money they pay for it. That is something; that is the knowledge of a clerk. Or, they may think of it as organization and discipline and results; as the knowledge of so many rules of arithmetic, and of so many text-books

on history, and geography, and grammar, and mechanics. That is something too; it is the knowledge of an organizing master, a specialist in his way. Or, they think of it as a proselytising and feeding organization in connection with their church or their chapel. That is the thought of a sectarian.

"But if education is thought of as the result in character; in usefulness, inventiveness, resource; in good manners, straightforwardness, trustworthiness; in self-control, reverence, piety; then there are but few who connect cause and effect, or believe in any such connection as a guide to the educator."

The "result in character" is exactly what the Herbartians aim at. They recognise that the worth of an individual depends not upon his knowledge, but upon his power of willing rightly, and the school instruction is to them an important factor in training the child's will.

"To be wearisome is the cardinal sin of instruction."—HERBART.

"Whoever holds fast to knowledge, and seeks to extend it, is interested in it."—HERBART.

"The aim of instruction is not the production of a many-sided knowledge, but of a many-sided interest."—REIN.

"When interest has been fully developed, it must always combine pleasure, facility and the satisfaction of a need. We see again that in all exertions, power and pleasure are secured to interest. It does not feel the burden of difficulties, but often seems to sport with them." —ZILLER.

"Interest means, in general, that species of mental activity which instruction must create, but which has no place in mere knowledge. For knowledge may be a store which a man may entirely dispense with, and yet be no other than before."—HERBART.

CHAPTER II

INTEREST AND ITS BEARING UPON INSTRUCTION

MR. STELLING'S method of instructing Tom Tulliver was not successful if viewed in the light of modern methods; he failed absolutely in interesting his pupil. "You feel no interest in what you're doing, sir," Mr. Stelling would say, and the reproach was painfully true. Tom's trouble was, that he was not interested in the things Mr. Stelling wished him to be. He was not stupid, nor was he without interests. "He never found any difficulty in discerning a pointer from a setter, when once he had been told the distinction, and his perceptive powers were not at all deficient. . . . Tom could predict with accuracy what number of horses were cantering behind him, he could throw a stone right into the centre of a given ripple, he could guess to a fraction how many lengths of his stick it would take to reach across the playground, and could draw almost perfect squares on his slate without any measurement. But Mr. Stelling took no note of these things; he only observed that Tom's faculties failed him before the abstractions hideously symbolised to him in the pages of the Eton Grammar, and that he was in a state bordering on idiocy with regard to the demonstration that two given triangles must be equal—though he could discern with great promptitude and certainty the fact that they *were* equal."

Tom had plenty of interests, but Latin Grammar and Euclid were not among them, and as Mr. Stelling considered these the "only basis of solid instruction," Tom fared badly.

Perhaps in more modern times even Mr. Stelling would have learned that it is the business of the teacher to make the pupil interested in his work. It is a commonplace among us in these days, that the teacher must make the acquisition of facts interesting, but there is nothing absolutely new under the sun, and we find Plato praising the Egyptians for their practice of teaching arithmetic by means of games, and Erasmus admiring the ingenuity of "the ancients," who he said "moulded toothsome dainties in the form of letters, and thus, as it were, made children swallow the alphabet," and Quintilian recommending teachers to teach the alphabet by means of letters in ivory which children take pleasure "in seeing, handling and naming," and Rabelais causing his pupil to play with cards after dinner and to learn "a thousand pretty tricks all grounded on arithmetic," and Locke advising that the child should play with ivory balls on which were pasted the letters of the alphabet, and so learn them.

Learning must be Made Interesting.

It is true that it is easier to preach reforms than to practise them, and we might give instances of schoolmasters before Mr. Stelling, and perhaps even after, who ignored these gentler means of making the child love his book.

A historian[1] records, "There is no other difference except that the rods in the fifteenth century are twice as

[1] Monteil, *Histoire des Français des divers états.*

long as those in the fourteenth." "Day and night," said an abbot to Saint Anselm, "we do not cease to chastise the children confided to our care, and they grow worse and worse"; and later we find Montaigne complaining bitterly of the harshness of his schooldays. "Instead of tempting and alluring children to letters by apt and gentle ways, our pedants do in truth present nothing but rods, ferules, horrors, and cruelty. . . . A pretty way this to tempt these tender and timorous souls to love their book, with a furious countenance and a rod in the hand."

Fictitious Interest.

The long reign of tyranny in the schoolroom is now happily over, few teachers dream of thrashing knowledge into children: the modern endeavour is to make study easy and pleasant. Arouse the child's interest and he will learn without difficulty, is our maxim. Therefore teachers procure pictures and models, and invent devices, in order to sugar the facts, as it were, so that they may be swallowed without distaste on the part of the child. Again, it is common to cultivate a fictitious interest by bribing the children to acquire facts. We promise rewards, prizes, scholarships and other distinctions, and the ambition of the pupil is aroused, which is strong enough to sustain his interest in his studies, in the hope of obtaining these honours for himself. This kind of interest is not true interest. To be interested means to love the subject and to pursue it for its own sake; but we have got into the way of speaking of interest in connexion with teaching as though it were merely a means to an end, instead of an end in itself.

True Interest.

The teacher considers interest a means of helping the child to acquire facts, and, when

that end is attained, he usually congratulates himself on the success of the means employed; he trusts that the knowledge may remain, though he knows the interest has fled. Herbart demands a higher kind of interest. He reverses the usual mode of looking at the matter and says, "The knowledge must serve to develop the interest. Learning may pass away, but the interest must remain throughout the whole life."

The acquisition of facts is of less importance during the child's school-life, than the acquisition of interest in the world and in mankind. Therefore we cannot test education by the amount of knowledge a child has gained. The accuracy and number of the facts which enable young people to pass examinations are not a true measurement of their powers. If we could calculate the vitality and variety of the interests which have come into a child's life by reason of his school instruction, we should be able to judge more truly of the value of his education.

We want to train human beings, and to do this, it is more essential to give them right interests than to make them learn many facts out of books.

Interest depends upon Knowledge.

This view by no means disparages the value of knowledge; for, after all, interest in a subject is largely a matter of knowledge properly related: if the mind contains ideas clearly arranged and logically connected on any given subject, this is a favourable condition for the growth of interest in that subject.

Tom Tulliver might have had more interest in his Latin Grammar if he had known "how there came to be such a thing as Latin on this earth;" and that there had existed a people "who bought and sold sheep and oxen," who built

walls and fortifications, and went to war with each other, through the medium of this language. His interest in Euclid might have been keener if he had understood that a man named Euclid had once used these perplexing problems for purposes of actual measurement.

Indirect Interest. Herbart distinguishes between indirect and direct interest. Indirect interest leads us to pursue some course not for its own sake, but in order to gain some advantage, *e.g.* a good place on the examination-list, a prize, a scholarship, or an advantageous position in life. "Alas!" says Goethe, "for that kind of activity which makes us impatient for the end, instead of rejoicing by the way."

"The more indirect interest predominates," says Herbart, "the more it leads to one-sidedness if not egotism. The egotist is interested in things in so far as they bring him an advantage or a disadvantage. The one-sided person has a tendency towards egotism—it may be partly unconscious—for he considers everything in its relation to the narrow circle in which he lives and thinks."

Direct Interest. Direct interest works from pure motives: the pleasure which arises from disinterested devotion to the subject is reward enough in itself.

The kind of interest Herbart demands must be direct, many-sided, and well-balanced. He distinguishes between many-sided and manifold; the latter he describes as a "dabbling in many things." The manifold interest may embrace many disconnected ideas, but the many-sided interest he compares to the sides of a triangle; for those three sides are clearly distinguished from each other, yet they form one harmonious whole.

It is impossible in this little work to give a complete idea of what the Herbartians mean by interest. To explain it fully would mean a thorough discussion of many of Herbart's doctrines. To understand something of its importance we must consider Herbart's view of the mind and the ideas it contains.

Herbart's View of Mind.

One of the favourite problems which philosophers have been trying for centuries to explain is the connexion between mind and ideas.

They usually begin with the mind and ask how it makes ideas. Herbart considers ideas and shows how they make the mind.

He says concerning the mind, "It has no innate natural talents nor faculties whatever, either for the purpose of receiving or for the purpose of producing. It is therefore no *tabula rasa* in the sense that impressions foreign to itself may be made upon it; moreover, in the sense indicated by Leibnitz, it is not a substance which includes in itself original activity.

It has originally neither concepts, nor feelings, nor desires. It knows nothing of itself, and nothing of other things; also in it lie no forms of perception and thought, no laws of willing and action, and not even a remote predisposition to any of these.

The simple nature of the soul is totally unknown and forever remains so." [1]

Ideas quickened by Interest develop into Willed Action.

Originally the mind seems of little account; it knows nothing, wills nothing, and does nothing, until ideas are presented to it and

[1] Herbart's *Lehrbuch zur Psychologie*, translated by M. K. Smith.

then it becomes an active force. The mind has no power of itself to will and to act, for the activity of the will is dependent upon the mass of thoughts which make up the ideas and with these are intimately connected feelings and desires. Willed action, then, depends upon the ideas, but all ideas do not produce willed action. The ideas may be dull and lifeless; they may only represent a dormant store of facts; in this case they cannot give rise to activity of will.

But the ideas may become vitalised by means of interest, and in this condition they become capable of willed action.

We now see that ideas of goodness may develop into ethical conduct, if the interest is strong and abiding.

Instruction and Interest.

Instruction must aim at training the thoughts of the child by means of interest, in order that they may be capable of willing, and of willing rightly. If the teacher cannot arouse this interest, he will not be able to make the school studies morally influence the mind of the child.

Herbart divides interest into two great classes, each of which has three subdivisions.

I. Interest arising from Experience of things.
 1. Empirical.
 2. Speculative.
 3. Æsthetic.

II. Interest arising from Intercourse with men.
 4. Sympathetic.
 5. Social.
 6. Religious.

1. *Empirical Interest.* This is the result of knowledge gained by experience and observation. The concrete illustrations, object lessons, Kindergarten work, etc., of

our lower classes are aimed at the satisfaction of this interest. The Germans in their outdoor observations in garden, forest and meadow attempt to satisfy this interest very thoroughly. What we call the cultivation of the senses is merely satisfaction of the empirical interest. The young child's interest is largely empirical.

2. *Speculative Interest.* When the child shows a desire to pass from mere observation of things to the investigation of causes, he exhibits speculative interest. We appeal to this interest when we require children to consider the reasons of things, and when we lead them to look beyond individual cases to generalisations, and to perceive the rational connexion between groups of facts or ideas. The speculative interest develops later than the empirical interest.

3. *Æsthetic Interest.* This interest is stirred by a contemplation of the beautiful, the good, and the true. A noble action, a sunset flush, an exquisite flower, a beautiful poem or picture, arouses lofty emotions in us.

All teachers have seen a child's eyes glow with pleasure when a fine action is related to him, or when he catches the music of a few lines of a beautiful poem. It is to gratify this interest that we endeavour to make the schoolroom beautiful with pictures, flowers, and artistic colours. I remember watching a number of little girls from the dark alleys of a big town walk past the teacher's desk on their way out of school, and turn their eyes with pleasure to a blue jar of yellow daffoldils. The schoolroom was dingy, but this one bowl of flowers awakened the æsthetic interest in a hundred little breasts.

4. *The Sympathetic Interest* is aroused by the sorrows

and joys of others; it was this feeling that Paul preached when he said, "Rejoice with them that rejoice, weep with them that weep" (Romans xii. 15). In the family life the child's feeling for mother, father, brothers and sisters, fosters this interest first. Later, in the Kindergarten and Infants' School, this feeling is encouraged.

5. *The Social Interest* is the feeling of sympathy extended beyond the family. In school the child must feel himself a part of a community, and must realise his responsibilities to others. "Pluck, endurance, fairness, good temper, and energy are the result of school games, the learning to give way to others, to be useful, unselfish, courteous, to be genial, to take the rough and tumble of the world as it comes—to bear the burdens of others,—the playing for your own side and not your own bat, the training in responsibility that comes from a position in the school."[1] All these are instances of the training of social interests which the school affords.

6. *The Religious Interest* is not confined to the Scripture lessons and prayers in school. All the various duties and responsibilities of school life may foster this interest.

"This spiritual education may come more or less from the chance intercourse of school life, from the conversations of friends, . . . from the life of those around."[2]

The child must become aware of his spiritual nature sooner or later. "There is in all of us that mysterious spiritual power that whispers to us in a voice we can scarcely hear amid the din and bustle of our daily life;

[1] Archdeacon Wilson.

[2] *Sermon to a Girls' School*, Archdeacon Wilson.

it is a voice that speaks to us not of this world and its struggles and prizes, but of a wholly different world—of heaven, of the ideal, of God." These are the essential and most vital interests which Life presents to us, and hence it is a complete recognition of the needs of the child's whole nature that Herbart demands of teachers when he insists on the importance of interest in his system of Education. "Interest," he says, "is an expression of our whole interest in the world and in humanity."



"The child of six or seven may, without exaggeration, be said to come to school from home, the fields and the streets, with his mind full of the elements of every department of knowledge. He is already a walking miniature encyclopædia. We are much mistaken if we think his mind is waiting for us before it begins to work. It is chockful of judgments.

"The teacher's main business is to take the chaotic child-synthesis to pieces, make clear what is confused and build on the foundations thus laid. But the teacher never leaves behind him the ordinary experiences of child-life; he simply interprets and extends them. It is daily life which gives material, and the school which gives interpretation, direction and form. Life and the school should be in continual reciprocity—never disjoined."—LAURIE, *Institutes of Education.*

"Experience and intercourse are the two constant teachers of men."—HERBART.

"From Nature man attains to knowledge through experience, and to sympathy through intercourse."—HERBART.

"The parents' teaching is the kernel of wisdom, and the schoolmaster's business is to make a husk over it."—PESTALOZZI.

"The proper study for man is his surroundings. So long as he knows himself only on the physical side, he must study himself through his relations to things, that is his childhood task; when he begins to feel his moral being, he must study himself through his relations to men; that is his life work."—ROUSSEAU.

CHAPTER III

EXPERIENCE—INTERCOURSE—INSTRUCTION

Formative Influences.

INTEREST is the aim of all instruction. The child has to be interested in the world and in humanity. That is true education, but the instruction he receives at school is only one factor in this education. There are other influences at work in forming him.

Child's Early Experiences.

During the first years of his life, the little child stores up a vast number of ideas. Jean Paul Richter says that the child learns more in the first three years of his life than the young man during his three years at the University. The infant learns to distinguish light from darkness, to recognise sounds, to distinguish colours, it touches objects and discovers that they are hard, soft, rough or smooth: all these experiences are the result of the gratification of his empirical interest. Dr. Karl Lange says in his work on *Apperception*, "It is, in fact, astounding what a relatively immense crowd of ideas a human being gains in the first years. He gets acquainted with the thousand things of home, street, garden, field, wood, the wonders of the heavens, the manifold events of nature, the land and the people of the neighbourhood, and learns to call them by name; he learns to use a great part of the vocabulary of [illegible] most important forms of

in the vernacular." These ideas acquired in early life are some of the most important a human being possesses; they are the strongest and most permanent.

Child's Early Intercourse.

But the child's observations upon the outer world are not enough to develop his whole nature. They give him knowledge of external things, but they fail to touch his emotional nature.

The child is a social being; he is sensitive to expressions of affection. He soon learns to love and trust his mother, and later to extend this love and trust to other members of the family. "The intimate intercourse of the child with father, mother, brothers and sisters easily gives rise to the feelings of affection and to benevolence in its preliminary form directed toward particular persons only. The social intercourse with playmates and others of the same age gives rise to sympathy in sorrow and in joy, the feeling of justice and of fairness. The helplessness and need that make the child run continually to his parents, produce the feeling of dependence, of respect and reverence for authority."

Herbart calls these two original sources of knowledge, Experience and Intercourse. Experience gives the child knowledge of the world he lives in, and Intercourse gives him ideas respecting his relations to mankind.

These two influences, Experience and Intercourse, are at work long before the teacher steps in with definite instruction, and they remain the "constant teachers" of mankind.

Experience and Intercourse insufficient.

These two influences are important factors in education but they are insufficient. We cannot trust the child to them wholly. Experience and Intercourse only bring the child into contact with the elements of the *real*, and through these he sees things as they are, but education must not only classify and

systematise these real things, but must show him also what *ought to be*—the ideal, therefore Instruction must step in, and present to him from the vast materials of the history of mankind, and the literary monuments man has left behind him, some of the noblest stories of human life and most elevated thoughts and beautiful fancies of men and women.

Instruction must Supplement them.

Again, Experience and Intercourse are insufficient because the natural surroundings of a child make up an exceedingly limited circle, and, if he depended solely upon his personal knowledge for all the ideas he possessed, he would become narrow-minded and one-sided. When a child has gained a clear notion of a river, having actually studied in detail the river nearest his own home, he can form an idea of what the Thames, the Ganges, or the Amazon, is like, through descriptions, pictures, and maps. A great deal of knowledge comes to us through the experiences of others, who have written accounts of what they have seen which we accept on their authority.

If we relied upon personal intercourse for all the knowledge of mankind, we should probably not fall so short as in the realm of Experience, for humanity is the same all the world over, and the feelings of our relations and friends are more or less like those of the whole of humanity; but we want to extend our Intercourse into other ages and nations, and we must again depend upon the records of others to supply this knowledge.

Contact with the Real necessary.

We admit the importance of Experience and Intercourse in the education of an individual, for in order to obtain full, strong and clear ideas he must come [illegible] with the actual. He must see and handle [illegible] to know [illegible]

patience with real human beings. Thus, he derives real ideas from original sources. As Herbart says, "From Nature man attains to knowledge through experience, and to sympathy through intercourse."

Work of Instruction. Instruction is a third factor in education; this is in the hands of the teacher. The teacher comes before the young child in his earliest school year; he knows that the mind of the child has been actively assimilating ideas for years, and he must consider what part he is to play in making use of these ideas.

The teacher must examine the stores of ideas in the child's mind in order that he may—(1) Arrange it; (2) Correct it; (3) Supplement it.

(1) Arrangement. The child has a wealth of ideas, but they were acquired without system and without order. It is the part of the teacher to talk naturally and quietly to the child about the things which interest him. The child will readily respond, as the teacher stimulates him to collect his masses of ideas and to arrange them in an orderly fashion.

The mental content of the child's mind, as Lange says, "consists of vivid ideas acquired during the most impressionable years of his life," and these ideas ought to stand in the closest relation to his later culture.

It is for the teacher "to reach down with regulative hand into those quiet, private thoughts and feelings of the child in which lie his ego and his whole future, that they may rise above the threshold of consciousness and communicate understanding, clearness, warmth and life to instruction."

The original ideas of the child, when arranged and put

in order, are to form the foundation of the new knowledge which the teacher brings later.

(2) Correction.

The child's ideas are often incorrect because he fixes his attention upon the most striking characteristics of an object and entirely disregards other details. Again, imagination plays a large part in a child's observations; he sees in many cases what he fancies he is going to see, and he is entirely convinced afterwards that he has seen it. Again, a child's ideas are so hazy and limited that he is often incapable of judging correctly of what he has seen. Hence the experiences of children require to be carefully examined and revised by the teacher.

(3) Completion.

The child's ideas are often incomplete. Lange points out that the very strength and vitality of a child's knowledge is a cause of its imperfection. The child is one-sided; his range of vision is limited; it only covers a few fields; therefore, though his perceptions may be strong they are incomplete. "The gaps left by intercourse in the little sphere of feeling, and those left by experience in the large circle of knowledge, are almost equally great, and in the former as well as the latter, completion by instruction must be welcome" (HERBART).

Instruction only a Factor in Education.

Teachers are apt to magnify the influence of instruction and to consider it the chief factor in education. The child and the natural contents of his mind are overlooked, and instead of finding out what thoughts and ideas already exist in his mind, and correcting, arranging and adding to them, the teacher often endeavours to force upon the child a mass of uninteresting facts which have no connexion with the

child's mental life, and hence are unintelligible and uninteresting to him.

Circle of Thought.

Herbart points out that in every child there exists a circle of thought which he has acquired from Experience and from Intercourse.

This circle of thought is to be extended by Instruction. This leads to a consideration of the subjects usually included in our school courses under the name of Instruction.

Why do we teach Arithmetic, Grammar, Drawing, French, Chemistry?

Choice of Subjects of Study.

Often the answer would be that these subjects are laid down in the Code, or are required in the examination. But even Codes and examinations are supposed to be guided by some logical principle in their selection of subjects to be studied.

Certain subjects are supposed to have value in the training of the child's mental powers. Object-lessons are said to train the observing powers. History trains judgment. Arithmetic trains the powers of logical thinking. Literature refines the mind. Drawing trains the hand to skill and the eye to accuracy, and so on. Here we see that each subject is selected on account of some special virtue of its own, and a place is found for it on the school time-table. In this method of selecting studies there is a danger of overcrowding the time-table and of overburdening the child's mind by giving him an amount of superficial information on many topics, because each seems to have very special reasons for being included. The problem which all thoughtful teachers are trying to solve is not How many things can I teach the child? but What kind of knowledge is worth most to the child?

Relative value of Studies.

The relative value of studies is beginning to exercise many teacher's minds. The discussion usually takes the form of a consideration of the merits of languages and science.

Spencer's View.

Mr. Herbert Spencer considers the question in his essay on *Education*. He reasons that it is well to give the child the knowledge that will help him to keep healthy, to make a living and to do his duty to his family and the State. Scientific Knowledge promotes these ends—therefore Scientific Knowledge is of most value in education : this is his conclusion. He would admit Art, Music and Literature, if time permitted, to fill up the leisure portions of life pleasantly. He considers what is useful to be of chief importance, and would devote the school activities to utilitarian ends.

The Herbartians consider the whole nature of the child, particularly emphasizing the moral development.

The Hebartian View.

The child's circle of thought is formed by Experience which he gains from his environment, and Intercourse which he gains from his human relations. "Experience refers to the domain of Nature ; Intercourse to that of human life." Instruction comes in to broaden and enlarge both these sources of mental life. Instruction, therefore, follows two chief lines. It enlarges actual human intercourse by means of an ideal intercourse" with men and women in poetry, history and literature. It widens the child's experience of Nature by leading him to observe, to collect and to experiment.

Prof. Rein, in his *Outlines of Pedagogics*, gives the following lucid summary:

THE CIRCLE OF THOUGHT.

Experience.	Intercourse.
Things of the Environment.	Men of the Environment.
Nature.	Life.
Knowledge.	Sympathy.
Broadening of Experience.	Broadening of Intercourse.
Natural Sciences.	Historical branches.
Realistic direction.	Humanistic direction.

Instruction

These two directions fuse in the general education furnished in the schools. All the subjects to be studied belong to either of these two groups which direct the instruction to be given.

Humanistic Studies predominate.

Prof. Rein and his school consider the Humanistic group the more important, because these studies deal with life, develop sympathy, and are calculated to directly help on the aim of education, the building up of moral character. "This conclusion," he says, "is by no means intended to express an undervaluation of any of the single subjects, but it aims at a correct proportionment of the amount which they may contribute to the formation of the youthful mind and character."

We are now in a position to sketch a general plan of the Instruction which is to supplement Intercourse and Experience.

"An analysis of the elements of culture shows us that the work of mankind is directed on the one hand to the ideal sphere—*i.e.* to religion, mental studies and art—on the other hand to the investigation of nature. Accordingly these two large groups of material may be summed up under the phrases—life of nature and life of mankind." [1]

INSTRUCTION.

A. Life of Mankind. Humanistic-Studies.

I. Moral Instruction.	II. Art Instruction.	III. Language Instruction.
1. Bible and Church History.	1. Drawing.	1. Mother Tongue.
2. Secular History.	2. Modelling.	2. Foreign Languages.
3. Literature.	3. Singing.	

B. Life of Nature. Natural Science-Studies.

I. Geography.	II. Natural Sciences.	III. Mathematics.
1. Mathematical Geography.		1. Geometry.
2. Physical Geography.		2. Arithmetic. Gymnastics and Play.
3. School Journey.		3. Physical Education.

[1] Dr. Rein, *Outlines of Pedagogics.*

"Let us now praise famous men, and our fathers that begat us."—*Ecclesiasticus.*

"The History of the World is but the Biography of great men."—CARLYLE.

"It is not of so much importance to know where Marcellus died, as why it was unworthy of his duty that he died there."—MONTAIGNE.

"Historical characters must seem to children real living beings whom they love or hate, whom they despise or esteem."—GUIZOT.

"Neither book nor any product of human skill, but life itself yields the basis for all education."—PESTALOZZI.

> "Where truth in closest words shall fail,
> When truth embodied in a tale
> Shall enter in at lowly doors."—TENNYSON.

"The worth of man depends not upon his knowledge but upon his will."—HERBART.

"The development of soul, little else is worth study."—BROWNING.

"If there be an order in which the human race has mastered its various kinds of knowledge, there will arise in every child an aptitude to acquire these kinds of knowledge in the same order."—SPENCER.

"Although the world in general advances, the youth must always start from the beginning, and as an individual traverse the epochs of the world's culture."—GOETHE.

CHAPTER IV

THE SELECTION OF HISTORICAL MATERIAL AS DETERMINED BY THE CULTURE EPOCHS

History Teaching in England.

THE teaching of History in England, at any rate in the primary schools, is on a low level. History is still an optional subject, and the statistics in the *Blue Books* for 1896 show that less than one-sixth of the schools throughout the country attempt to teach it as a class-subject.

It is curious that in a country where the right of voting is almost universal for men, we make no attempt to enhance the value of the vote by giving the voter an intelligent knowledge of the past history of his own country.

Mr. Herbert Spencer considers that history ought to "illustrate the right principles of political action," but he complains that our school histories fail in this purpose. "Read them, if you like, for amusement," he says, "but do not flatter yourself they are instructive."

History Teaching in France.

In the primary schools in France, History is a subject which receives much attention. All the children who pass through them receive a clear outline of the history of their own country in its relation to other countries, as well as a few sketches of the striking events of Grecian and Roman History, and some general account of Eastern civilizations. In the German schools, particularly in those professing Herbartian principles, the value of History is fully recognised.

To the Herbartians, History is pre-eminent among the school studies. History taken in its broadest sense in-

Influence History in Moulding Character.

cludes all the studies contained in the Humanistic group, and it is placed first in the scheme of instruction, because it is considered of primary importance in moulding the character and in stimulating interest.

History records the deeds of human beings, their aspirations, motives, actions, triumphs and failures; it shows the relations of individuals to each other, to society, and to the State. The noblest thoughts of human beings are stored up in Literature, and man's sense of beauty finds expression in Art, in Music and in Architecture.

The Present depends upon the Past.

We cannot be interested in things unless we understand them, and we cannot understand things as they are, unless we know how they came to be so; therefore we must study the past in order to comprehend the present. This comprehension will help us to realize modern civilization, and to face our responsibilities as intelligently as possible. It always costs more trouble to do things intelligently than to follow an unintelligent routine, and in the teaching of History, as in other affairs of life, it is easier to follow beaten tracks than to find out the best.

Worthless History Teaching.

History teaching often becomes mere lists of dates and dreary outlines. These have no influence upon the child's life; they do not put before him ideals of conduct and help to form his character. Certainly, a knowledge of dates and accurate information concerning the names of all the leaders in a battle and the exact terms of treaties help children to pass examinations, and the school to procure satisfactory Government grants. These temporal benefits pass away,

however, and leave the child very much as they found him; but true History teaching may powerfully influence his whole life, and every one must admit that it is not what a child knows, but what he becomes that is of chief importance.

Character of more Importance than Information.

Bishop Butler recognized this when, in a sermon preached more than one hundred and fifty years ago on behalf of London Charity Schools, he said: "Of education, information itself is really the least part."

Our modern examination system seems to point to a contrary opinion being held, but its chief *raison d'être* is that it is easy to work, for information is readily tested, while the qualities which make up character are not.

Montaigne regarded history as a means of moral training, and Locke held that "as nothing teaches, so nothing delights more than history."

Dr. Arnold's View.

Dr. Arnold placed a high value on the use of History in education, and Mathew Arnold pays a tribute to his father's life and teaching.

> "And through thee, I believe
> In the noble and great who are gone."

True History teaching should place before all the children in the country some of these noble and great men, and so help to raise them to a higher moral level.

More than fifty years ago Dr. Arnold sketched a scheme for the teaching of History. It is so much in accord with the Herbartian method that I mention it here.

Use of Pictures in Teaching History.

He would have young children taught through pictures taken from the Bible, from Roman, Grecian and English History; these pictures

to form the text of graphic and simple stories. Any one who has watched the eager interest of young children over pictures and their stories will realize how much can be done for them in this way. Recently I have been observing two bright twin-boys of six years. Every morning as soon as it was light they came to my room with two great volumes of Shakespeare, and asked for the stories of Cæsar, Shylock, Ariel, and Macbeth from the pictures. The Shakespeare stories and *Robinson Crusoe* form their world of romance at present.

Dr. Arnold would give the boys of the middle forms of a school vivid and lively sketches from the histories of Greece, Rome and England. He says that the main purpose of these studies is to excite interest and to stimulate a desire for further knowledge. In the upper forms he requires that the boys should study some first-rate historian.

The Herbartians in working out their scheme for History teaching seem to agree in sentiment with Bishop Butler, Montaigne, and Locke, and in practice with Dr. Arnold.

Predominance of English History.

Stories from English History predominate too completely in the Historical reading books used in English schools. In the primary schools, especially, no attempt is made to enlighten the children as to the history of any other nation but their own, except that of the Jews; and Bible teaching is given under special conditions without relation to any other subject.

The responsibility of selecting suitable historical narrative for children which lies upon the teacher is great. A whole world of history lies behind us and the child is heir to it. The Herbartians are guided by the following considerations in their choice :—

Child's Taste.

Firstly, the selected matter must suit the child's taste and capacity, for the mind takes in nothing that does not suit it, and true interest is awakened only when an appetite is created.

Ethical Value.

Secondly, the narrative should present some inspiring example, or contain some ethical truth. It was Butler who defined History as "philosophy teaching by examples," and the Herbartians would make History teaching a series of Object-lessons in Morals.

In considering the comparative suitability of the histories of Jack the Giant Killer, the Black Prince, and Mr. Gladstone, for a child of five years of age, nobody but a Gradgrind would hesitate in choosing the first.

The Remote is Attractive to Children.

Jack, as a hero, accords most with the child's taste and understanding, because Jack belongs to the same stage of culture as the child. A slight experience of children soon teaches us that they are psychically nearer to remote ages than the present: therefore, we do not attempt to put complicated problems of modern life before the young child. We know that the present rests upon the past, and only by a knowledge of the past does the present become intelligible.

Child's Environment helps in Teaching History.

This study of the history of the past does not prevent the child from studying his environment. The policeman, the postman, the Lord Mayor's Show, the Queen's birthday, a regiment of soldiers, are familiar sights in the child's life. These may be taken as object-lessons, and the child will gain some idea of civic authorities, the State and its defenders, long before it is prepared to study these matters at all thoroughly. The child is interested in his environment: therefore he must receive

simple explanations of it. It is, however, a mistake to confine the child exclusively to his environment, and to refuse to gratify his natural tastes with stories of earlier ages. "I don't want my children to know what a party of tomfools in steel coats did a thousand years ago," said an eminent statesman, "but I do want them to know the clauses in the last Beer Bill—that is practical knowledge." So he substituted Parliamentary Documents for Histories in his nursery and schoolroom. He valued facts and ignored the ethical value of History. As Carlyle tells us, "Great men taken up in any way are profitable company. We cannot look, however imperfectly, upon a great man without gaining something by him. He is the living light fountain, which it is good and pleasant to be near."

Rote Learning, versus Inspiring Stories.

We are recognizing more clearly every year that rote learning is of little value in forming character or in developing intelligence. "Don't you hate river-basins?" said a bright little girl to her aunt the other day. She was learning by heart long lists of river-basins, and she had never been made to observe a real one; hence she hated river-basins, just as children who are required to learn by heart collects, psalms and chapters of the Bible as Sunday tasks, hate them. If striking human examples of goodness, courage, truth and falsehood from the pages of the Bible or profane history are put before children, they form their own moral judgments very readily and often with surprising correctness.

Some of the finest examples of teaching are to be found in the Gospels. The attention of the common people was

arrested, and their moral judgment appealed to in the parables.

"For Wisdom dealt with mortal powers,
Where truth in closest words shall fail,
When truth embodied in a tale
Shall enter in at lowly doors." (TENNYSON.)

The Child's Development an Epitome of that of our Race.

The Herbartians hold that the child's mental development is an epitome of the evolution of humanity. The child's mind develops rapidly and he passes through a series of epochs in his transition from infancy to maturity, in each of which he has different needs, interests and powers of comprehension. These epochs correspond roughly to those which the race has passed through in its development from barbarism to civilization. "If, therefore, one would appeal to the understanding of the child, or touch the springs of his intellect, or pourtray to him ethical relations capable of claiming his attention, one should be mindful of these epochs."

Dr. Rein in his *Outlines of Pedagogics* points out that "this idea of the analogy between individual and general development of humanity is a common possession of the best intellects. He quotes a number of authorities in support of this theory.

Spencer's View.

Mr. Herbert Spencer lays down as one of the guiding principles of instruction that "the education of the child must accord both in mode and arrangement with the education of mankind considered historically, in other words the genesis of knowledge in the individual must follow the same
of knowledge in the race."

Theory of Culture Epochs a Guide in Selecting Humanistic Material.

The theory of the Culture Epochs is suggestive, and in a general way guides many teachers, half unconsciously it may be, in their selection of suitable subject-matter for children; but the Herbartians go further, and define the successive stages as the Primitive, the Hunting, the Pastoral and so on. Ziller, who was one of the chief expounders of Herbart's doctrines, expresses himself clearly and confidently on this theory. He says: "The mental development of the child corresponds in general to the chief phases in the development of the people or of mankind. The mind-development of the child, therefore, cannot be better furthered than when he receives his mental nourishment from the general development of culture as it is laid down in literature and history. Every pupil should accordingly pass successively through each of the chief epochs of the general mental development of mankind suitable to his stage of advancement"; therefore the material of instruction "should be drawn from the thought material of that stage of historical development in culture which runs parallel with the present mental state of the pupil." The Herbartians consider that History is real character-forming material, and place it as the centre of all the subjects to be studied; the other subjects group themselves around it and are in some measure subordinated to it.

For each school-year is chosen a complete "section of Humanistic material." These sections are arranged in progressive chronological order from the older and simpler stages of mankind to the newer and more complex.

Herbartian Selection of Humanistic Material.

Ziller and Rein have chosen periods of history which are intended to correspond to the

various stages of culture in the child during the eight years of his school life—from the age of six to that of fourteen.

The history of the Jewish nation and the rise of Christianity are in Herbartian schools studied historically side by side with secular history. The following is a specimen sketch of the historical material, from Biblical and general sources, which forms the core of instruction in such a school.

	Biblical.	Secular.
1st year.		Standard Fairy Tales.
2nd ,,		*Robinson Crusoe.*
3rd ,,	Patriarchs: Abraham, Joseph, Moses.	Thuringian Sagas. Stories from the Trojan War and the Wanderings of Ulysses.
4th ,,	Judges in Israel.	*Nibelungen Lay*, Siegfried and Gundrun Sagas.
5th ,,	Kings in Israel: Saul, David, Solomon.	Charlemagne, Otto the Great, Boniface.
6th ,,	Life of Jesus.	Crusades, Attila, Barbarossa, Rudolph of Habsburg.
7th ,,	History of the Apostles.	Discovery of America, the Reformation and Luther, Thirty Years' War.
8th ,,	History of the Reformation, Church Catechism.	Frederick the Great, Napoleon, William I., Present time.

This Humanistic material forms the centre around which all the other school subjects are grouped. History is the backbone, as it were, of the entire instruction.

A Herbartian Time-Table, which gives an outline of the other subjects studied in connexion with this character-forming material, will be found in a later chapter.

Bible and History Teaching.

These subjects, Bible and History teaching, receive the lion's share of the school time. A lesson is generally given in each four times a week.

They are the subjects which receive the best attention of the most skilled teachers in the school. A stranger who wishes to hear some of the school teaching is invariably asked to attend the Bible and History lessons. Some of the best Scripture lessons I have ever listened to were given in Herbartian schools. It will be noticed that in the first and second school years there is no definite Bible teaching. It is believed that the child is not yet in the stage of culture capable of duly appreciating it. The child is in the myth-making age, and its tastes must be gratified by fairy tales and stories of the struggles of primitive man. But Bible teaching is not wholly neglected in the lower classes. The school life is closely associated with the home life and the Church life. The Church festivals—Christmas, Easter and Whitsuntide — are very carefully observed. The children learn suitable hymns, and hear stories of the chief events in the life of Christ in connexion with these festivals. But the definite systematic instruction is reserved until the child is of an age to begin to appreciate it.

The following is a scheme of Historical material suitable for a Primary School in England :—

INFANT SCHOOL.

Children of Four Years.

Nursery Rhymes : Mother Goose, Queen of Hearts, etc.

Fairy Tales : Sleeping Beauty, Three Bears, Jack the Giant Killer, Ugly Duckling, etc.

Children of Five Years.

Selections from Grimm's and Andersen's Fairy Tales.

Children of Six Years.

Greek Stories : Jason and the Fleece, the Dragon's Teeth, Pegasus, Paris and the Apple, Helen of Troy, Wanderings of Ulysses.

STANDARD I.

Robinson Crusoe.

STANDARD II.

Early British Legends, Giants and Dwarfs, Gods Thor and Loke, Idwyn and the Apples of Youth, Beowulf, Folklore of Neighbourhood and English, Welsh, Manx, Scottish, and Irish legends, *e.g.* Lancashire Witches, Story of King Orry and Manx Fairies, St. George and the Dragon, King Lear and His Daughters, Stories of St. Patrick, of St. Columba, of Macbeth.

These stories would be selected according to the legends of the neighbourhood.

STANDARD III.

Romulus and Remus, Rome, Horatius, Julius Cæsar, The Romans in Britain, The Druids, Boadicea, Legend of St. Albans, The Saxons, Bede, Cædmon, of King Arthur and Merlin.

STANDARD IV.

Alfred the Great, Stories from Alfred, Otter the Merchant, The Finns, Whale and Seal Hunting, Agil the Hunter, England in Alfred's Day.

Northmen: Danes and Warships, King Guthrum the Sea-King, King Eric and the Poet Egil, Sweyn, Canute, Alaric the Goth, Fall of Rome, Attila, Charlemagne.

STANDARD V.

The Normans, Battle of Hastings, Hereward, Thomas Becket, Peter the Hermit and the Crusades, Richard I., King John and the Great Charter, Robin Hood, Simon of Montfort, Conquest of Wales, Bruce, The Hundred Years' War, Wars of the Roses.

STANDARD VI.

The Renaissance, The Discovery of America, The Reformation, The Spanish Armada, Great Men of the Elizabethan Age, Thirty Years' War, Civil Wars of Charles I., The Commonwealth, The Restoration, William of Orange.

STANDARD VII.

Walpole, The Pelham Ministry, Pitt and the Seven Years' War, The American War, Warren Hastings, French Revolution, Napoleon Bonaparte, Struggle with Napoleon, Nelson, Wellington, The Refor Bill, Abolition of Slavery, Factory Acts, Queen Victoria, Free Tra and the Crimean War, Indian Mutiny, The Gladstone and Disra Ministries, Colonial Expansion, Agricultural Improvements, Inventio

Among the books useful for the children in such a series are :—

Old Greek Stories, Hanson.
Stories of King Arthur, Hanson.
The Heroes, Kingsley.
Tanglewood Tales, Nathaniel Hawthorne.
Heroes of Asgard, A. and E. Keary.
Old English Stories from British History, York Powell.
Stories of Charlemagne, Hanson.
Chaucer Stories, Seymour.
Columbus, Washington Irving.
The French Revolution, Gardiner.
Hereward the Wake, Kingsley.
Harold, the Last of the Saxon Kings, Bulwer-Lytton.
Lays of Ancient Rome, Macaulay.
Lives of the Greeks and Romans, Plutarch (translated).
Wonder Book, Nathaniel Hawthorne.
Robinson Crusoe, Defoe.
Fairy Tales, Andersen.
Westward Ho! Kingsley.
English History from Contemporary Writers. (A Series.) Edited by Prof. York Powell.

The Child in the Myth-making Stage.

This scheme is graduated according to the Culture Epochs. In the early years the child lives in a realm of fancy, and its imagination is developed by the epic fairy tales of the world. There are stern teachers who would forbid all fanciful stories and confine the little ones to pure facts. They urge that the child has to live in a real world, and it cannot begin too early to learn real things. The pity is that thousands of little ones are too early

"Called from faery land to wander in dark ways."

The transition from the Greek stories to *Robinson Crusoe* is discussed in another chapter.

Native Legends and Folklore.

At eight years of age, when Standard II. is reached, the child comes nearer home. The early beliefs of our Saxon forefathers, with their gods and their giants, are discussed, and the legends of their own county or district. Scotland, Ireland, Wales, and various parts of England would furnish various legends. In the Isle of Man the stories of King Orry would prove attractive. Local folklore should always be used at this stage.

The Romans and Saxons.

In Standard III. the child ought to begin to appreciate historic truth; but early history is mixed with myth and legend. The story of Romulus and Remus, supplemented by a selection from the large store of striking stories of Roman History will form an introduction to the study of British History. The Romans in Britain can be picturesquely brought before the children in a few vivid pictures of the people and the life.

Arthurian Stories.

The coming of the Saxons and the introduction of Christianity. Stories of Cædmon and the stories of King Arthur are all to be woven into an English child's mind before he can grasp clearly the idea of the English nation.

Alfred.

In Standard IV. we attempt to put stories of real historic truth before the child, and to present the beliefs of the people of the times. Alfred the Great is a heroic figure; he always fires the imagination and reverence of the English child, if he is well presented.

The stories of the cakes, of his measurement of time by candles, of his learning to read, are the common property of almost every child, however ignorant he may be of other facts of his nation's history.

The stories of Otter the merchant, of Agil the Hunter, and some geographical items of whale-hunting, are translated by Mr. York Powell for children, and prove very fascinating.

The Northmen.

Then the Northman with his warships, and the bold Danish sea-kings come within the child's horizon. Again Mr. York Powell [illegible] stories of the ships and of King G[illegible] kings who ruled in England are a[illegible]

A few stories showing what the rest of the world was doing while these striking events were happening in Britain enlarge the child's understanding and lead him to seek for further stories of his heroes for himself.

Alaric, Attila, and Charlemagne.

Alaric the Goth is an imposing person, and the Fall of Rome a tragic event which never fails to fascinate children, and, if we have time to give heroes of other nations to contrast and compare with our own Alfred, Attila and Charlemagne are sufficiently striking and worthy.

These glowing pictures from the history of nations often give the child a real interest in the subject. This is the foundation. The three school years which remain can be employed in giving in bold outline the striking events which tended to mould the destinies of the British nation up to the present time. These events are closely associated with other countries in Europe. The Crusaders boldly going forth to wrest the tomb of Christ from the Turks; the impetus given to life by the Renaissance; the discovery of America; the French Revolution; the colonial expansion of the British nation—all lead the pupil into wider relations with humanity.

Stories of Britain.

Time for History Teaching.

It must be understood that for such a scheme of History teaching a liberal amount of time must be afforded. History is the backbone of the entire instruction; therefore at least three hours each week must be devoted to it.

The Bible as History.

Bible teaching is rendered valuable if treated historically side by side with secular history. Too often it is treated in scraps, no connexions being established, and no clear idea of the sequence of events

given to the children. A scheme of Sacred History similar to that in use in the German schools could be used advantageously side by side with the secular history. Patriarchs, Judges, Kings, the life of Christ, the Apostles, the growth of the Christian Church, taught systematically year by year, would help the child clearly to establish the Christian ideal, and to understand its significance in the history of the Crusades, the idea which animated the early colonists who, like Columbus, wished to carry Christianity to heathen nations, the Pilgrim Fathers, and the strifes in connexion with the Reformation. After such a history course in the school life, every child would know a little of the formative influences of some of the great nations of the world. The founding of Troy, and the stories of Helen, Achilles, and Ulysses would at any rate teach him that the Greeks had existed. The Founding of Rome and Julius Cæsar, Alaric and the Fall of Rome, would leave the impression of the rise and fall of a powerful nation.

A careful study of the history of the Jews and the rise of Christianity and its later struggles, amplified by lessons on the Gospels and the Acts of the Apostles, would certainly show how powerfully Christianity affected the history of mankind, and a bold sketch of the men and events which made the British nation would help the children to become worthy citizens. The manner in which Literature and the other subjects are grouped around history is considered in another chapter.

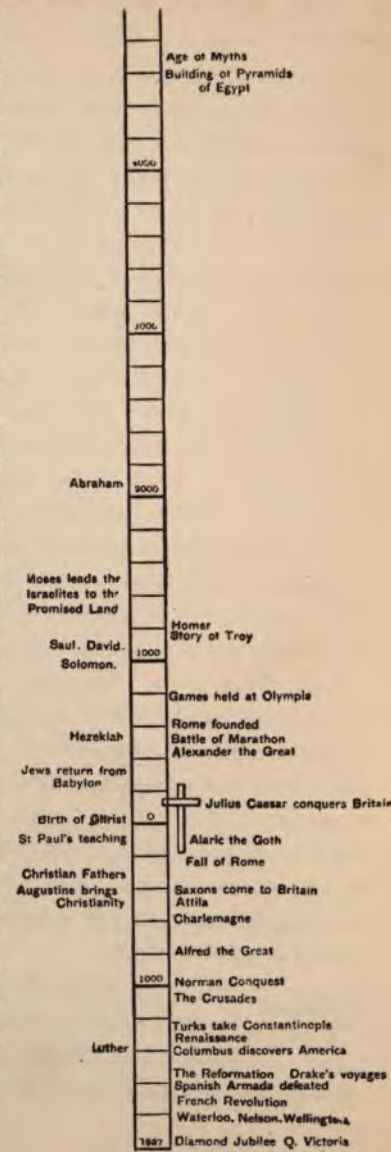
Value of History Studied Chronologically.

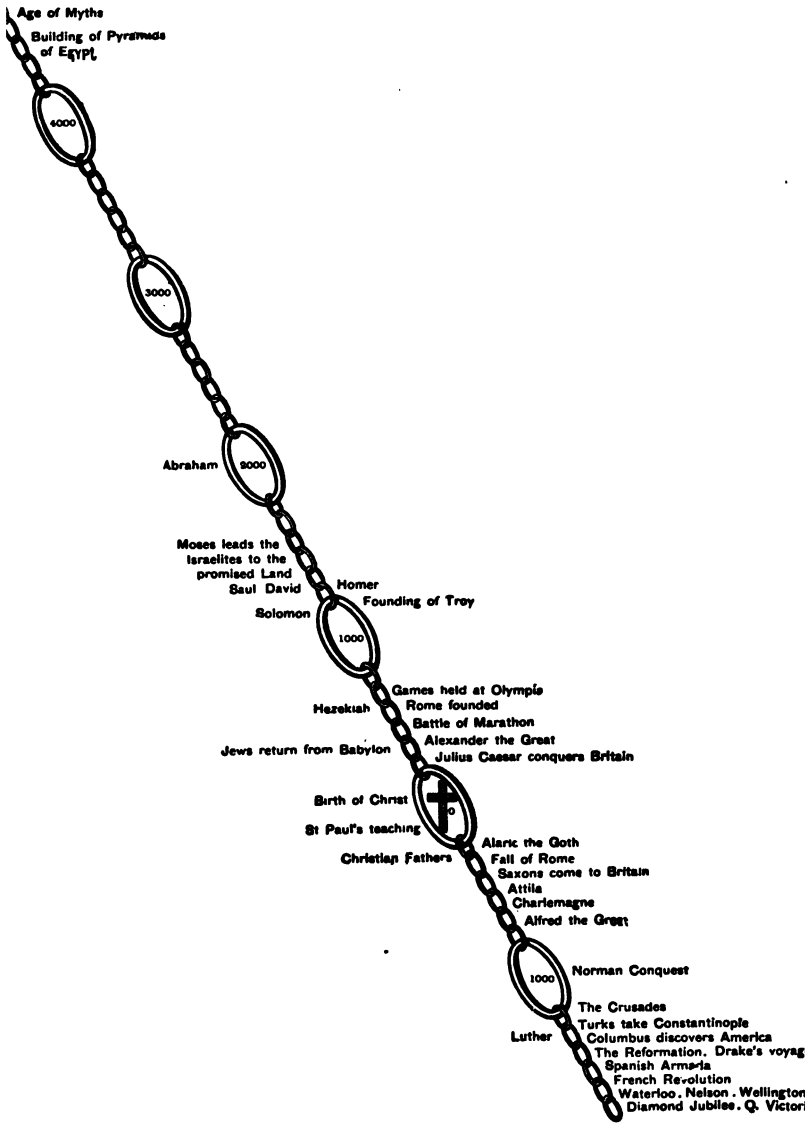
It is of profound importance that all the events be linked together chronologically. As a rule the blankest ignorance prevails in the mind of the average child as to the place in time in the

history of the world, of the discovery of America, Julius Cæsar, the birth of Christ, and the building of the Pyramids.

Children delight in making time charts for themselves. I append two—one a simple line of time, and the other a chain linking the events together. These are simple and not overcrowded. The teacher should draw some such chart on the blackboard in every History lesson, and indicate the time of each event.

What the child needs chiefly in his school History teaching is a broad, connected outline of some of the periods of the world's history shown in the great men and great events which are the landmarks of time.




Age of Myths
Building of Pyramids of Egypt
4000
3000
Abraham
2000
Moses leads the Israelites to the promised Land
Saul David
Homer
Founding of Troy
Solomon
1000
Games held at Olympia
Hezekiah
Rome founded
Battle of Marathon
Alexander the Great
Jews return from Babylon
Julius Caesar conquers Britain
Birth of Christ
0
St Paul's teaching
Alaric the Goth
Christian Fathers
Fall of Rome
Saxons come to Britain
Attila
Charlemagne
Alfred the Great
1000
Norman Conquest
The Crusades
Turks take Constantinople
Luther
Columbus discovers America
The Reformation. Drake's voyages
Spanish Armada
French Revolution
Waterloo. Nelson. Wellington
Diamond Jubilee. Q. Victoria

"Every fairy tale worth recording at all is the remnant of a tradition possessing true historic value."—RUSKIN.

"Yea, a deeper import
Lurks in the legend told my youthful years
Than lie upon that truth we live to learn."

—COLERIDGE.

"By nothing is England so glorious as her poetry."—M. ARNOLD.

"God's prophets of the Beautiful
These poets were."

—MRS. BROWNING.

"The acquisition of good poetry is a discipline which works deeper than any other discipline in the range of work of our schools; more than any other, too, it works of itself."—M. ARNOLD.

"To have even heard of Cervantes, of Dante, of Spenser, of Keats, is a step in education. To know there is a literature of the world, and to have felt, even for a moment, something of its seriousness, its beauty, its generous position, its pathos, its humour, is to lay a good foundation."—PROF. DOWDEN.

"The charm, therefore, of what is classical in art or literature is that of the well-known tale, to which we can nevertheless listen over and over again, because it is told so well."—WALTER PATER.

"Books, which lay
Their sure foundations in the heart of man,
Whether by native prose, or numerous verse,
That in the name of all inspired souls—
From Homer the great Thunderer, from the voice
That roars along the bed of Jewish song,
And that more varied and elaborate,
Those trumpet-tones of harmony that shake
Our shores in England."

—WORDSWORTH.

CHAPTER V

HUMANISTIC STUDIES

Humanistic Group of Studies.

HAVING decided that history is to be the leading feature of the time-table, we are now in a position to discuss the Humanistic group of studies.

HUMANISTIC GROUP.

I.	II.	III.
Moral Instruction.	*Art Instruction.*	*Language Instruction.*
1. Bible and Church History.	1. Drawing.	1. Mother Tongue.
2. General History.	2. Modelling.	2. Foreign Languages, Ancient or Modern.
3. Literature.	3. Singing.	

Imagination of Children

We have seen that the young child is in the myth-making age; therefore he is profoundly interested in fairy tales, because they appeal to his imagination, and depict strongly, humanely, and vividly the relations of human beings to each other. "His mental state is very like that of primitive people, who attribute life and feeling to material objects and invest all things with human and divine qualities."[1] The child has a lively imagination, he delights in personification. His dramatic instincts lead him to invent all kinds of scenes in which he himself is an actor; he represents all kinds of objects to himself after his own image, and he enters into conversations with imaginary animals

[1] Compayré.

and inanimate things. Nothing is too exalted to enter into the fancies of children. Says Wordsworth:

> "Oh! give us once again the wishing cap
> Of Fortunatus, and the invisible coat
> Of Jack the Giant Killer, Robin Hood,
> And Sabra in the forest with St. George!
> The child, whose love is here, at least doth reap
> One precious gain, that he forgets himself."

Colonel Parker says: "The liveliest conscious activity of a child is fancy; the little creator creates his own world, and lives, moves, and has his being in it. All history proves this; myths, parables, fairy tales, have made children and childish peoples happy throughout the ages. Myths and fairy tales are the sure signs of the upturning of the hearts of the little ones to God. The proper function of fancy in intellectual life is spirituality. Spiritual truths are hidden in the precious honey of stories."

Poetical Value of Fairy Tales.

"Fairy tales prepare the child to appreciate poetry, and the human element in them satisfies his historic instinct."[1] Fairy tales are not falsehoods, and the child who is amused or frightened by them is not deceived for an instant. Stories are the ideal, something truer than actual truth; the triumph of the good, the beautiful, the true."

Choice of Fairy Tales.

The fairy tales must be carefully chosen "out of the simplest and naïvest phases of different epochs of culture, stories which answer to the imagination of children and represent to them the characteristic features of the best part of humanity."[2] Morbid and foolish stories, together with all that is gross, vulgar,

[1] Laboulaye. [2] Rosenkranz.

and in bad taste, should be avoided. Simple, chaste, and naïve the stories may be, but not sentimental. The people in fairy tales accord with the casual, inconsequent manner in which a child thinks. Kings, queens, and courts are represented with charming simplicity. No half-and-half measures, no hesitating over motives, disturb the beautiful directness of the actions of these fairyland personages. They are good or bad, and they marry princesses or have their heads cut off accordingly. The giants are big, wicked, and woefully stupid; the valiant mortals who attack them are good, brave, and quick-quitted, and they always win. This satisfies poetical justice. Life in fairyland has its trials, but it is exciting and full of compensations. "In general, the people think and feel altogether like children. Just as the child knows only good and bad people in his intercourse, according to the sympathy or antipathy which they inspire in him, so also in the fairy tales the persons are either good or bad. In them the impatient feeling of justice, so characteristic of young people, is always satisfied."[1]

The Child is Akin to the People in the Fairy Tales.

Rein's Use of Fairy Tales.

The Herbartians, as we have seen, depend solely upon fairy tales for the Humanistic material in the first school year, when the child is six years of age. Prof. Rein, of Jena, and others, have selected a series of fairy tales suitable for this stage, and have also worked out the method of dealing with these stories in class, and shown how the other subjects are connected with them.[2] "The Town Musicians of Bremen," "Snow White and Rose Red," "The Wolf and the Fox," "The

[1] Lange.

[2] *Das erste Schuljahr.*

Wren King and the Bear," are among the stories chosen. The choice of the tales depend, in some measure, upon the locality in which the child lives, so that the home surroundings may be interwoven with the thread of the story.

The Ethical Value of Fairy Tales.

The Herbartians emphasize the ethical value of the fairy tale. Ziller puts the case clearly in summing up the use of fairy tales. He says: "These tales being poetical are better suited than anything else to the earliest stage of the child's individuality, when imagination, which needs cultivation because in it all higher aspirations are rooted, is strongest. They are not limited by time or space, for they are often without the names of persons or places. The child lives in them beyond the limits of the material, makes the dead living, puts a soul into the soulless, and has intercourse with the whole world as his equal. This has no bad influence on him, for the tales contain, besides their subjective view of things, a number of objective, æsthetic, and ethical ideas and principles consonant with reason. They serve especially to exercise the ethical judgment, as the tales open out a large field where many true and simple cases come before the child, upon which he can decide easily, quickly, and clearly."

Method of Presenting the Fairy Tale.

The method of presenting the story in the German schools is to divide it into sections, each of which contains one or two striking points, and to discuss each section with the children, encouraging them to add their experiences and suggestions to the discussion. Thus in the story of *Hühnchen und Hähnchen*, after the two had spent the day on the hills where the nuts grew, they were disinclined to walk home.

"Why?" "Perhaps they were tired," cries one boy, "or lazy" suggests a second, "or ate too many nuts," suggests another. "They may have become too proud to walk," is a fourth speculation. "In any case they decide to drive," declares the teacher, "but where can they get a carriage?" "Make one," is the prompt reply. "How?" "They can cut down trees." "They might find some iron." "My brother made a carriage out of an old chair." "My father can make a wheelbarrow." "They could make a carriage out of a beer barrel," are the remarks and suggestions in reply to this query.

"Well," resumes the teacher, "they made their carriage out of nut-shells." A ripple of laughter went round the class at this announcement, and an eager discussion began. "I can make a butterfly carriage out of walnut shells," declared one freckled-faced mite. "Cocoanut shells are bigger than walnut shells." "What a lot of shells they would want!" "Did they gum them all together?" were some of the remarks made. When the story has been discussed in this way—and it often takes several days to get through one story—the teacher reads it slowly and distinctly in the words of the author. There is no watering down the literature to suit the children; they are taken to the original source at once, in order to accustom them to a good style.

Language Lessons. These lessons on the story are language lessons, inasmuch as the children contribute more than the teacher to the discussion. They express their own thoughts in their own simple language. This is corrected, and in the frequent recapitulations the children are required to narrate the whole story in their own words.

Dramatic Instincts appealed to.

Their dramatic instincts are appealed to by their being required to act the story. There is no preparation, no apparatus. This acting is very simple and quite impromptu. Two or three children are called out. One is Hühnchen, another is Hähnchen, a third represents the duck. "But where is the carriage?" "I know," cries a small boy, and he turns a chair upside down. The pointer is the whip, and the table the inn, and so they go on inventing the dialogue and acting the story with great seriousness and evident enjoyment. The drawing lessons are delightful. The children make rough sketches to illustrate objects or incidents in the story. The duck, the pin, and the needle, the egg which the duck laid, and so on. Songs are selected which bear upon the home life or school work. All the festivals of Church and civil life are observed, and hymns and patriotic songs are learned and sung. Christmas is, of course, associated with the story of the Child Christ, Christmas hymns, a Christmas tree, presents, and general festivities.

Association of the School and Church Life.

School and Citizen Life. Sedan Festival.

The festivities in honour of the victory over the French at Sedan are also a favourite school festival. Sedantag is a day given up to processions, sports and games in the meadows. All the children assemble in the school in the morning, and sing thanksgiving and patriotic songs, recite war ballads, and hear an address on the victory. The games are organized in the meadows, and all the girls are dressed in white, with garlands in their hair, while the boys wear a sash. They are refreshed in the intervals of the games, not with tea and buns, but white beer and bread-and-sausage. The last-

named national dainty is cooked out of doors under the trees on huge gridirons, and clouds of blue smoke are emitted in the process, which hang over the meadows and become a part of one's memory of a Sedan school festival.

Robinson Crusoe.

In the second school-year the children are seven years old. The literary material given to them at this stage is *Robinson Crusoe.* Rousseau was one of the first to recognise the educational value of *Robinson Crusoe*; and Ziller was the first to give it a recognised place in a systematic plan of instruction. The imagination of the child has been fostered by the fairy tale; it must still be kept lively, but its activity must be limited, and the child must be led into the realm of the possible.

Rousseau on Robinson Crusoe.

Rousseau exclaims that he hates books. "They only teach us to talk about what we do not understand." He makes an exception, however, in favour of *Robinson Crusoe.* He considers it sufficient for Émile's entire library. "It shall be the text on which all our discussions of natural science shall be only commentaries."[1] He would have his pupil carried away by the story, he should play Robinson Crusoe, and go through all the experiences for himself.

Ziller shows how *Robinson Crusoe* takes the child back into prehistoric times, when man, through many obstacles, made himself master of nature. The child learns in the story of *Robinson Crusoe* to realize those early times and the value of simple inventions. He gains his first insight into the history of invention and culture. Robinson must build his own house, find his own food, make his own

[1] Rousseau, *Émile.*

rude pottery, and his own simple clothes. With these incidents are closely associated a wealth of material in elementary geography, natural science, drawing and observation. All this helps to make the story valuable for school purposes. The method of presenting the story follows that of the fairy tales. Some details of these lessons are given later.

Relation between the Story of Robinson and the Child's Environment.

Age of Heroic Sagas.

The Herbartians give the children heroic sagas as the literary material in the third school-year. Herbart declared in favour of Greek sagas; but as Germany is rich in heroic stories, the German sagas are usually preferred in German schools. William Morris says that the story of the Volsungs is the great national saga of the North, and he would have it to be to our race what the tale of Troy was to the Greeks. It may become a part of our school material for a later generation when it is more accessible for school purposes.

The Child's Relation to his Native Sagas.

The German Sagas tell of the heroes of the German people. The child soon becomes familiar with them. They speak his language and live in his land. "These bold heroes into whose world of thought and deed he has already been introduced by the stories of the neighbourhood, the castle ruins grey with age, the knights' armour and weapons, popular belief and legend."[1] These heroes "still live on in the mouth and hearts of the German people."

The Saga deals with Historical Figures.

"The Saga treads earthly ways more than the fairy tale, and turns with preference to human figures and deeds, as it connects its

[1] Lange.

tales with definite persons and places, and not seldom mingles with these some real historical facts, and so it forms the natural transition from the fairy tale to history."

Thuringian Sagas.

One cannot help being impressed by the influence of the Thuringian Sagas on the lives of the children. Ludwig is a very real person to them, and the Wartburg, Rudelsburg, Freiburg, and other castles in the country excite their profoundest interest. "Have you no Ludwig in England?" a little boy asked me as he recounted to me deeds of his hero during a walk to the Wartburg. "Aren't you sorry you haven't a Ludwig?" he persisted. I wondered to how many English children Alfred or King Arthur were such real personages.

Herbart's View of the Influence of Sagas.

Herbart insisted that stories from the classical age of childhood among the Greeks furnished fit mental food for children. "Give them an interesting story," he writes, "rich in incidents, relationships, characters, strictly in accordance with psychological truth not beyond the feelings and ideas of children; make no effort to depict the worst or best, only let a faint half-unconscious moral tact secure that the interest of the action tends away from the bad towards the good, the just and the right, then you will see how the child's attention is fixed on it, how it seeks to discover the truth and think over all sides of the matter."

Such a story, he says, must "carry on its face the stamp of human greatness," for children readily distinguish the commonplace. The boy of eight wishes to be a man; his outlook extends beyond all stories written to children. "Present to the boy, therefore, such men as he himself would like to be. Such you will certainly not find near

at hand, for the boy's ideal of the man corresponds to nothing which has grown up under the influence of our present culture."

Method of Teaching the Sagas.

This ideal personality, Herbart says, is to be found in Greek stories, and he commends us to the history of Achilles and Ulysses.

The method of teaching the Sagas is the same in the main as in the fairy tales. The following is an outline of a lesson I heard on Ludwig at Altenburg:

The teacher stated the aim of the lesson thus: "Why was Landgraf Ludwig named the Springer?"

As the lesson developed the boys sat fascinated with interest. At the first halting place the points were summed up:

1. Ludwig had committed a sin.
2. The Kaiser had thrown him in prison.
3. He was destined to die.

He was imprisoned in the castle called Giebichenstein, situated on a high rock, below which the river Saale flowed. He was closely watched. Then followed a vivid account of the cunning he employed to deceive his keepers,—how he wrapped himself up in many clothes and threw himself from the tower into the river below; how he escaped on a white horse, and how later he built a church to expiate his sin.

I afterwards visited the castle near Halle and the church in company with school children, and I was again thrilled by accounts of the famous leap.

A Saga reading-book is used which contains the substance of the stories simply written in good German. A general reading-book is also used; this contains prose and poetical selections which are read in connexion with the

History and Natural Science and geographical descriptions. The Bible is also read in school. The rough sketching, begun in connexion with fairy tales, is continued in the 2nd and 3rd school-years. The children draw towers, gateways, bridges, and castles. Sometimes they draw a whole series of pictures to illustrate the story. These are not accurate or finished productions, but they are often vivid. The story of Ludwig and the poor pedlar was illustrated by a boy of eight, who showed them to me with keen interest. The market place at Eisenach, Ludwig on his steed attended by a crowd of knights, the winding path up to the Wartburg and the castle in the distance, the pedlar with his pack, were all depicted and explained to me by the boy.

Rough Sketching in connexion with the Stories.

Language Lessons.

The lessons in the mother tongue consist of the forming of sentences, and continual practice in speaking correctly in continuous narrative. All the lessons in the lower classes appear to be language lessons more or less. The geography lessons and the school excursions and journey are closely connected with the sagas. This point is discussed in the next chapter.

Nibelungen Sagas.

After the child has studied the stories of his own district, he rises to the National Saga, the *Nibelungenlied*; Siegfried, and Gundrun become his heroes. These stories are used as the historical material, and are read in a simple prose reading-book, while poems such as Uhland's "Siegfried's Sword" are read and learnt in connexion with them. The geography studied in connexion with these Siegfried stories is the Rhine and Danube.

The Stage of ... History

... most useful exercise of imagination," ... Blackie, "... when it buckles

itself to realities." In the fifth school-year the child, having passed through the myth-making age and the age of heroic romance, is confronted with real history. He studies the lives of Otto the Great, Charlemagne, Alfred the Great, and other famous characters "who incarnate the history which they create."

These stories are presented to the children in vivid pictures. The teacher's language needs colour, in order to bring before the child's imagination the very men themselves.

The child has now reached the age of reality, and his further studies are taken from the pages of history.

In the sixth, seventh, and eighth school-years he gets a good outline of the history of his own country, as well as some general idea of striking events and persons in other lands. In the Karolinen Schule in Eisenach I found that the girls studied the Elizabethan Age, Louis XIV. and XV., The French Revolution, Napoleon I., France and Italy in the Nineteenth Century, and a little Oriental History.

Uses of Reading-Books in School.

The Reading lessons tend to supplement and add interest to the historical studies. The use of the school reading-book is described in *Das dritte Schuljahr* by Herr Pickel, one of the teachers in the Eisenach school. He says the function of the reading, book "is to prepare for, deepen, and bring into a connected whole the various sections of the general instruction. It should, for example, embrace in history, literary products rising out of a period and about it, through which a glance is opened into the varying culture of bygone days, namely, historical saga, poems, simple historical narratives from the original sources, and, besides these, descriptions of events

(historical pictures), such as serve both as connecting-links for the instruction and as models of narrative style. For the geography and *Naturkunde* it should contain descriptions complete in themselves and beautiful, including suitable poems so far as these can be provided by our literature."

The Reading-books in the German schools form a valuable connecting link between the various school studies and the home life and environment of the children.

Special Reading-Books. Special Reading-books are prepared for special districts; therefore the historical associations and geographical peculiarities of the child's own neighbourhood are introduced. The importance of giving children information of their own surroundings cannot be too strongly emphasized. In the reading books used in Thuringia are to be found "The Jena Church," "The Battlefield of Jena," "The Thuringian Forest," "The Wartburg," "The Saale,"[1] "Eisenach," "Luther," "The Erl-King,"[2] selections from Schiller's *Song of the Bell*.[3] Stories of the great men of Weimar and of Goethe and Schiller are very suitably placed in these Reading-books.

Ballads. Stirring ballads by great writers, which serve to intensify the historical narratives, are also read and committed to memory. Germany is rich in such ballads, and they form an essential part ot school Reading-books. "Siegfried's Sword," "Barbarossa," "Arminius," "Charlemagne," "King Otto I.," "Gundrun's Lament," are examples of such poems.

[1] The river on which Jena stands.

[2] The scene of this poem is a village near Jena.

[3] Schiller studied bell-casting at Rudolstadt, near Jena.

The Quellenbuch.

The *Quellenbuch* (Book of Original Sources) is intimately associated with the history teaching, and portions of it are sometimes to be found in the school Reading-books. At random I pick the following examples from it:

Letters of Tacitus describing the country and the manners of the ancient Germans.

A letter written by Boniface to Pope Zacharias describing the founding of the cathedral at Fulda.

Goethe's account of Frederick the Great.

The Proclamation of the German Emperor on the Consolidation of the Empire, 1871.

Many Natural History pieces are also included in the Reading-books.

Reading-Books for Lower Classes.

In the books of the lower classes are to be found, firstly, pieces referring to the home and village or town life. "The Home," "Mother and Child," "The Child and School," "Christmas," "The Christ Child," "The New Year," "Good-Night," "The All-Seeing God," "Sunday," "The Baker," "The Weaver," "The Snow Man," "The Village," "The Mill," "The Church"; the simple and homely proverbs which are scattered up and down the Reading-books, and which teach thrift and perseverance, may be included in the home-life group.

Secondly, pieces referring to the life of Nature: "Who wakes the Flowers?" "Sleep of the Flowers," "Coming of Spring," "The Fir-tree," "Forest Song," "The Blue Violet," "The Squirrel," "The Hare," "Autumn," etc.

Thirdly, the Fairy Tales, Fables, and Sagas, which have already been discussed.

The best German patriotic songs are always to be found in the school Reading-books.

It is hardly necessary to mention that the Reading-books are not read straight through. Portions are carefully selected which bear upon the other lessons.

Logical Sequence and Relation of Ideas.

The point I particularly wish to emphasize here is the value of logical sequence and the relations of ideas. The Herbartians endeavour to give what they call "educative instruction" by awakening thoughts and groups of thoughts in the pupils' minds in connected order. One idea is linked to its natural companion, and new ideas are grasped and linked to the group to which they ought to belong.

The Mind Unifies Ideas, but it Needs Help.

Hence the child learns "to know by wholes," as Plato says, and in time he comes to regard the world not as a few groups of scattered events, but as a harmonious unit. It is the low stage of intelligence that supposes objects to exist in independent groups; the trained and thoughtful mind sees relations. We know that the human mind has a natural tendency to unify its knowledge, but it is unreasonable to thrust all kinds of disconnected facts haphazard upon unformed childish minds, and to expect them to arrange these facts logically.

Many of our school Reading-books contain excellent literary and historical matter, but we too often neglect sequence and points of relation in our use of them.

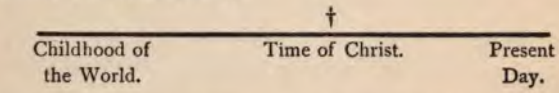
Want of Sequence and Connexion in Reading-Books.

I pick up a literary school Reading-book at random and find Bacon on *Studies* succeeded by a psalm from the Old Testament, which is followed by a portion of *Beowulf*.

Confusion of Ideas in Children's Minds with Regard to Sequence.

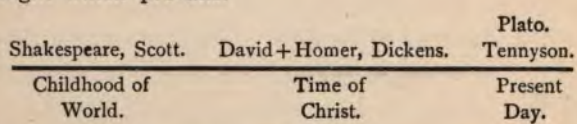
Selections from Dante, Xenophon, Defoe, Plato, and Keats, are the kinds of sequences one finds, and the children read straight on through the book, and obtain a sad confusion of ideas on writers and persons, and their relation to the world's progress. If the development of the child is the aim which is to rule our school curriculum, we must consider the sequence of events and the relationships of school studies.

Try a simple experiment with twenty intelligent children picked from Standards VI. and VII. Draw a line of time on the Blackboard.



Give half a dozen names, say — Scott, David, Homer, Shakespeare, Dickens, Plato, and Tennyson, and ask the children to place these names according to their position in time in the world's history.

The following is no exaggeration of the confusion of thought which prevails.



Sometimes the children refuse to attempt the task at all, and frequently they leave David out altogether, because there is no connexion between the Bible teaching and other school subjects; hence they vaguely consider people in the Bible as transcendental personages who have no existence out of the pages of Holy Writ.

Wasted Effort in our Reading Lessons.

We spend a large portion of time in our primary schools in requiring children to read literary selections, much of which seems wasted effort, for rarely do the children acquire either the power of reading aloud intelligibly, or a taste for good literature.

Slovenly Pronunciation and Scrappiness of Thought.

A recent circular from the Educational Department calls attention to the slovenly enunciation and the monotonous intonation in the reading of school children, and the enormous increase of late years in scrappy and worthless publications of the *Tit-bits* and *Scraps* type indicates that though our growing and adult population can read, the taste for ephemeral and even pernicious literature is increasing at an alarming rate.

The chief aim of the reading lessons in our primary schools is too frequently to get through so many reading-books in an allotted time. When the teacher has defined some of the unfamiliar words in the passage and made a few impatient observations on neglected aspirates, and required the children to read through the whole piece simultaneously and breathlessly, and a few children have read individually, often in an inaudible or slovenly manner, the lesson is supposed to be concluded satisfactorily.

Value of Literature in School.

That the reading of literature in school has a high moral influence is a matter that the teacher rarely considers. Matthew Arnold was constantly emphasizing this. He says, "The reading lessons should be used not only to secure the bare power of reading—a most valuable power . . . but they should be made to contribute to the opening of the soul and imagination."

It is admirable that a child should be able to read a passage of *Julius Cæsar* or a ballad of Macaulay clearly and distinctly, but it is more admirable if he be able to feel and appreciate them.

"To be incapable of a feeling of poetry," says Wordsworth, "in my sense of the word, is to be without love of human nature and reverence for God."

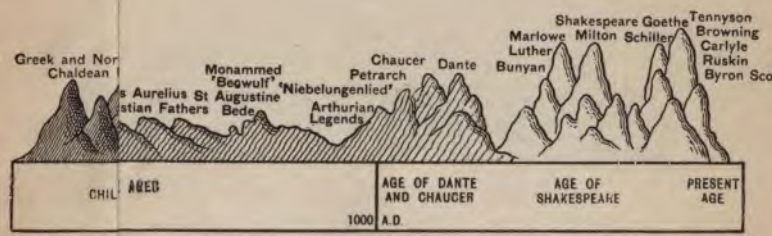
Reading should Foster a Love of Literature.

It is not my intention to discuss the difficulties of teaching reading; I merely wish to suggest how a love of literature may be fostered. Local interest, careful selection of stirring ballads, and beautiful descriptions, associated with other studies, clear comprehension of the subject, and proper treatment of the reading material have much to do with arousing interest in the lessons.

The selection and proper treatment of good literary material are of the profoundest importance in our school instruction. Upon this depends the child's interest in the world and in humanity, which he will seek to gratify in after-life by reading real literature.

Some Training is Necessary in order to be able to Appreciate Literature.

To be able to read with sustained pleasure such works as *Hypatia*, *Julius Cæsar*, *Ivanhoe*, or *Romola*, requires a certain amount of preliminary training, combined with some classic, historic, and geographic interest, and those who have listened to stories of the Greeks, the Goths, the Romans, the Saxons, and the Florentines, will read with satisfaction and comprehension, because they can relate the incidents with previous knowledge and locate the events in the progress of the world.



he great periods of literature in the
riods.

To face page

"Come forth into the light of things,
Let Nature be your teacher."—WORDSWORTH.

"Wherever our home is, there lie all the materials for the study of the entire globe; the eye may be easily trained to see the greater in the less."—CARL RITTER.

"A correct philosophy of the world and of life is possible to a person only on the basis of knowledge of oneself and of one's relation to surrounding nature."—WAITZ.

"Are we not, as well as the old philosophers, placed in Nature's garden? Why then do we not cast about our eyes, ears, and nostrils, as well as they? Why do we not, I say, turn over the living book of the world instead of old papers?"—COMEINUS.

"He, who in his youth
A daily wanderer among woods and fields
With living Nature hath been intimate,
Not only in that raw unpractised time
Is stirred to ecstacy, as others are,
By glittering verse; but further, doth receive,
In measure only dealt out to himself,
Knowledge and increase of enduring joy
From the great Nature that exists in works
Of mighty poets."—WORDSWORTH.

"It ought to be made an important portion of the weekly work of every school to take the children into the country to breathe its balm, grow strong in its healthy breezes, see and enjoy its beauties, and receive there that glorious training of sense and soul, head and heart, possibly only beneath the blue vault of heaven. In truth, the country should become an outer, uncovered class-room—a Divine museum utilized by our teachers."—RUSKIN *on Education.*

CHAPTER VI

NATURAL SCIENCE STUDIES

NATURAL SCIENCE GROUP.

I.	II.	III.
Geography.	*Science.*	*Mathematics.*
Mathematical Geography.	Object Lessons.	Arithmetic.
Physical Geography.	Natural Science.	Geometry.
School Journey.		

Connexion between Humanistic and Natural Science Group.

WE have briefly considered the first group of subjects, and it now remains to us to consider the second group, and discover how it may be arranged with reference to the first group in order to obtain points of connexion. The idea prevails among some teachers that history is a distinct study, having no connexion with geography, and that a child can learn geography in junior classes and history in senior classes. Geography and history are natural companions, and should be studied side by side. Compayré says, "The history of France is the soul of the country and the natural geography is its body." Geography teaching is on a fairly respectable footing in our primary schools. Mr. Bain tells us "that geography, after arithmetic, is the study that is most advanced in respect of method."

Study of Child's Environment.

The method generally recognis
schools follows the principles lai

Reclus more or less thoroughly. "We must always take as a starting-point what the child sees; but does he see nothing more than the school and his village? He sees also the infinite heaven, the sun, stars, and moon. He sees the storms, the clouds, the rain, the distant horizon, the mountains, the hills, the downs, or simple undulations, and trees and shrubs. This is real geography, and to learn it the child has not to go beyond the things which surround him, and which are exhibited to him in their infinite variety." We know that the child's mind is full of ideas which he has gained at home, in the streets, fields, and lanes, by means of experience. The instruction which the teacher must bring to enlarge the child's store of experiences should be taken from the same source, the surroundings of the child. "The child on entering school," says Lange, "has mastered only a limited part of his surroundings, and many of his home observations need clearing up and sifting; we lead him back into the old familiar world in which he has hitherto lived, and which is dear to him. We teach him to know it better, and to make him more familiar with it we develop a knowledge of his home environment."

Heimatkunde of German Schools.

The *Heimatkunde* or study of the home surroundings which one finds in the lower classes in the German schools, is a true introduction to real geography. Heimatkunde is a comprehensive word. It includes the plants of the garden, the trees and creatures of the forest, the industries of the village or town, and the agricultural products, as well as a very careful study of the hills, valleys, rivers and streams in the immediate neighbourhood. These Heimat-

kunde lessons correspond to our object lessons, with the difference that there is much more active observation on the part of the German child, and the lessons frequently take place out of doors, in the garden, the forest, or meadow, by the river, on the hill, or in the valley. Only those things which come under the child's personal observation are studied. Lessons, for instance, on the papyrus reed or the kangaroo would be excluded as being beyond the child's experience. The proper time to teach these would be when the child was studying Egypt and Australia. If a menagerie visited the town or village, and the children were able to make their own observations on the lion and elephant, lessons on these animals would be suitable and necessary.

Unknown General Subjects to be avoided.

It is not uncommon in English schools to find general subjects such as "Trees," "A bunch of spring flowers," included in a list of object lessons. Lange especially warns teachers against general discussions on the "seasons," "garden," "forest," etc., and points out that they should rather start with a definite "mountain,' pond, or river of the neighbourhood, and always return to it, if thereby "obscured and unsettled ideas can be lifted into clearness." "Not the general, but only the particular, the special, the individual, can be an object of these Heimatkunde lessons.

Study of School, and Garden, and Village.

The child studies the class-room and school-buildings first; he measures doors, windows, desks, and floor-space, and develops plans of these observat[illegible]ard with the teachers. The schoo[illegible] garden aff[illegible]

which climbs around the window, the cherry trees, the rose bush, the lilies of the valley which the children brought from the forest and planted themselves, the swallows, the butterflies, the snails, and the caterpillars all offer an infinite variety of materials for Nature study. They learn to observe the sun, and the shadows it casts at various times of the day, they make daily observations on the weather. With a simple rain-gauge they measure the rainfall. They keep caterpillars, and watch their various transformations. They bring frog-spawn from the nearest pond, and observe how tadpoles and frogs develop. Later they extend their observations to the entire town, and map out its chief streets and buildings. They make many excursions into the forest, fields, and meadows. They watch the farmer sowing seeds in spring, and the harvesting in the autumn. They observe the crops, and distinguish between the kinds of vetches and clover. They count the grains of corn on a single ear, and consider the kinds of beet-root from which sugar is made.

Outdoor Observations.

Several excursions of this kind are well fixed on my memory. With a class of little girls of seven, who were making observations with their teacher, I crossed the stream which ran near the school, climbed the hill on the opposite side of the valley, and here watched them as they pointed out the school, the church, the gas-works, the flour-mill, the chief streets, and several of the homes of the children. In the class-room afterwards I watched them day by day as they related their experiences and developed a plan of their observations on the black-board with their teachers. Again, with a class of boys from Jena, I climbed the Salgenberg and watched the boys

make observations on the sun, indicate the points of the compass and point out the river Saale flowing through the valley, its right and left bank, and discuss its course. They pointed out two smaller valleys—the Mühlthal and Gemdenthal—and the streams which ran through them, and the chief heights of the neighbourhood. Later I saw these boys making a large clay model in the school of these observations.

"This home instruction demands therefore a wandering through the home neighbourhood in all directions; it requires of the child a continued observation of what is and what transpires in its surroundings. This kind of instruction would completely miss its purpose if, instead of the objects themselves, it were to present merely pictures, such as are so popular in the pictorial lessons of our schools, or if it were to attempt to overcome the deficiencies of the child's perception through scattered descriptions borrowed from a text-book, and through the mere word of the teacher."

The child "must see and hear and observe with his senses the things the perception of which he is to share; and since in general "things do not come to the children," says Lange, "the school has to take the children to the things."

The English teacher has not yet learned to do this successfully. We believe too entirely in class-room studies and knowledge which can be neatly put down on an examination paper, to waste much time on giving the children opportunities to learn from their own observation and experience. When the German child has carefully studied his own district, he takes wider flights. The school journey

comes in and furnishes him with more extended fields for observation.

The School Journey.

The aim of the school journey is to give the child an outlook beyond his home environment. I have accompanied the boys on several school journeys in and around the Thüringian Forest, and this district is certainly a rich harvest for such journeys, with its miles of pine and beech woods, its winding valleys, wooded hills, ruined castles, and mountain heights. Opportunities of studying plant and animal life, and of gaining concrete ideas of valleys, rivers, quarries, and mountains, are numerous. Its historical associations are also rich, the Thüringian Sagas, the Crusades, and Luther have left many memories, and Goethe and Schiller have left behind them many literary associations.

Relation between History and Geography.

Geography helps to make history real to the children. On the Landgrafenberg, a height above Jena, where Napoleon's armies gained a victory in 1806, I have heard a wonderfully lucid history lesson. The direction of the valleys, and the course of the river, the position of the forests, and height and slope of the hills all show why certain armies stayed in certain places, why they took certain directions, and why they fought the battle where they did.

The school journey begins with the third school year—when the child is about eight years of age—and is continued until the eighth school year. I will sketch one or two in which I have taken part. Recently I accompanied a party of little boys of the third school year on their first school journey. They were studying the Thüringian Sagas and the geography of Thüringia. The pre-

Preparation Lessons for a School Journey.

paration lessons prior to the journey were helpful and suggestive, and I gathered that we were going to study the river Saale and its tributaries in a distant district. Castles which Ludwig had built were to be visited. A cathedral at Naumburg was to be studied. The boys had observed and drawn round-arched and pointed-arched church doors and windows, and various kinds of towers from churches and castles in and near Jena, so they had some ideas on castles and churches to help them to understand those we were to study during the journey. We were to visit salt-springs, and sugar factories, and to examine a peculiar kind of beet-root which was used in making sugar, and which did not grow in the boys' own neighbourhood. Vineyards and sandstone quarries were also to be visited—these were also unfamiliar to the children in their own district. Each child had a simple map of the district, which the master had sketched for him.

Third School-year Journey.

We rambled for three days, sleeping at quaint old inns at night, and living on simple fare. We saw the Saale broader and more imposing than in the home district, and we studied the confluence where the Ilm joined it. We climbed to the Saaleck, a ruined tower built on an eminence and commanding a wide view of the Saale and the valleys. We heard how it was built by the bold German knights a thousand years ago to keep off the invading Slavonic tribes who came down upon the country. We sang war songs and national Thüringian songs. We examined autumn berries, found green frogs, brown lizards, and curious moths. We rested in beech woods and watched the squirrels; we pelted each other with horse-chestnuts; we visited the salt springs and other places of

interest in the town of Kösen; we studied the cathedral at Naumburg, its doors, windows, towers, its choirs, crypt and statues; we compared an ancient gateway with a gateway in Jena, and we slept in a rambling old inn at Freiburg. Next day we examined Freiburg Castle in detail, wandered through the valley by the river Unstrut, studied a stone quarry, sat by the wayside and tasted the different kinds of beet-root, passed through the vineyards, and made many other discoveries and observations. The boys were keen and appreciative; and when they returned home brown and sturdy, they had many personal experiences and observations, which were referred to and supplemented in the class-room during the school work. The school journey is also considered valuable on the grounds that it enlarges the boys' intercourse with his fellows. He meets strangers, and learns how to behave towards them. It also affords the masters an opportunity of getting to know and study the character of individual boys under natural conditions when the restraint of the school routine is removed.

Journey of Fifth School Year.

A journey of six days with the boys of the fifth school-year in the Bavarian Highlands (Rhöngebirge) was a valuable experience.

The boys were studying the life of Boniface together, with the geography of the Rhöngebirge. We studied the formation of rocks, the direction of rivers, the roads and railways. We climbed two or three mountains. We visited the cathedral at Fulda, and saw the statue and grave of Boniface. We spent a night in a monastery on the Kreuzberg. We were present at a Roman Catholic procession and festival at Wüstensachsen. We went into a coal

mine; we visited wood-carving workshops; we saw the processes of pipe-making, of sheep-shearing and wool-weaving. We had many opportunities of making comparisons between the unfruitful nature of the soil in these high regions and the rich land in the Jena valley. We compared plants, rocks, the houses of the people, and the churches. Jena is a Protestant district, and this was a Roman Catholic neighbourhood, therefore the boys were much interested in the differences they found in the churches. The long marches through beautiful country, the beech woods, the primitive meals, the kindly entertainment by the monks, and the many adventures which befel us, will ever remain in my memory. The cost was trifling, but the accommodation was often exceedingly simple. Sometimes the boys slept on straw beds; but, in spite of privations, all the boys were well and happy when we returned to Jena singing home songs. That the journey had been beneficial in enriching the boys' minds no one could doubt who witnessed the lessons afterwards, and watched their intelligent appreciation and eager replies when allusions were made in the lessons to their experiences gathered on the journey.

Enough has been said to show how the instruction in school aims at increasing the child's experience and intercourse during his school life. Other school journeys associated with the life of Luther, and connected with the Harz Mountains and the battlefields near Leipsic, are referred to in the time table. This sketch serves to show how close the connexion may be between history and geography, and how real both these [illegible] ren.

History studied through Geography.

Our land is as rich as any in the world in historical material scattered all over the country in the form of beautiful churches, old castles, battlefields and halls, which may be found in any neighbourhood.

Luther, Ludwig, and Boniface are realities to the German child. He has seen the ink-stains on the table where Luther translated the Bible, and the church door on which he fixed his famous propositions. He has stood in the castles which Ludwig built to defend his land; and he has seen the grave of Boniface. He has identified himself, as it were, with the heroes of his country.

English Materials for School Journey.

Our Arthur, Alfred, Richard the Lion-hearted, and Cranmer might become a part of the life of every English child if we gave history the position it merits in our primary schools. How the stories of Alfred and Hereward would inspire the children who lived within a school-journey distance of the Vale of the White Horse and Ely if these districts were properly used to make history a living reality to the children. How vivid and life-like would be the impressions of a Roman town, if the children of Hampshire, Berkshire, and Oxfordshire were taken to Silchester to see the mosaic pavements, pottery, Roman houses, bricks, and Roman wall; and how eager would be their interest in the story of Julius Cæsar, and later in Shakespeare's play, after their concrete experiences of a Roman town at Silchester. One can imagine a fascinating study of the Elizabethan period and Shakespeare in connexion with a journey through Warwickshire, visiting Kenilworth, Stratford, and Warwick. [1] "What a wealth of

[1] Felkin: *Introduction to Herbart's Education.*

material London, and many other English towns offer. Starting from the mere names of London streets, with which a London child is, or can be made familiar, a skilful teacher can help him to people them with the life of the past, and by descriptions, and pictures, and visits to different spots, can bring Roman, Saxon, Norman, and Elizabethan London in succession before him. The crowded Walbrook and Fleet Street become once more the little rivers falling into the Thames, and the three streams the eastern, western and southern boundaries and protections of the first British settlement; a wild moor, now Moorfields, its northern boundary, and beyond a vast forest, stretching far away to the northward, the remains of which are to be seen at Epping. In some such way a child may get an idea of the first settlements of our forefathers, and learn how from barren marsh, dense forests, and clay-built huts, the city of five million people has grown."

Impressive and eloquent stories are told by old walls, buildings, and even names. They lead the child back to the times of his ancestors.

Connexions between History, Geography, and Natural Science.

The relations between history, and geography and natural science, are so closely interwoven in a Herbartian school in Germany, and they appear so natural, that one is inclined to wonder how these subjects can ever be dissociated.

Geometry and its Application on School Work.

Geometry, which is begun in the fourth school year, is studied practically as well as theoretically. The boys measure distances, and calculate spaces. The schoolroom, garden, and neighbourhood afford practice in the earlier stages; later, mensuration is studied, and Euclid. This knowledge is applied

in the workshop, where they make wooden and cardboard models of churches and castles they have visited. In the workshop, also, the boys model in clay pieces of ornamentation from church doorways, arches, and windows. These are afterwards cast in plaster of Paris, and used to illustrate the history lessons.

Arithmetic.

A glance at the time table will show that the arithmetic is very similar to our own, but much simpler, on account of the Decimal System which is employed in money, weights and measures.

In the lower classes the arithmetic lessons are very thorough, and the advance is very slow.

The work is almost entirely oral throughout the school. The practice of giving problems, and causing the children to work them individually on slates or paper, I have never seen employed in German schools. The master propounds the problem—it has usually some practical application to the other work—and the boys work it out on the blackboard. They proceed very slowly, step by step, and every point is made clear to them. There is much more discussion in the arithmetic classes than ever I saw in English schools. The master says very little. A lifting of the eyebrows, or a single word of encouragement or dissent is sufficient. The boys state the difficulty, and unravel it for themselves.

"Her aim was not to impart knowledge, but to awaken sympathy with objects in as far as they were interwoven with the incidents, duties, joys and wants of the children's existence."—*Leonard and Gertrude* (PESTALOZZI).

"Is there a solitary blossom, or outcome of human thought, feeling or volition that does not send its taproot deep down into the subsoil of early years?"—FROEBEL.

"Only those thoughts come easily and frequently to the mind which have at some time made a strong impression, and which possess numerous connexions with other thoughts."—HERBART.

"Enrich your teaching with as many relevant associations as possible."—LAURIE.

CHAPTER VII

THE ASSOCIATION OF STUDIES AND THE IMPORTANCE OF THOUGHT STUDIES

Relationship of Studies to each other.

THE theory of the culture-epochs gives us help in a general way in the selection of suitable historical matter to put before children. The next point to be considered is the association of the subjects which the child studies.

They should be arranged so as to throw light upon each other, and this may be done by establishing among them a series of close relationships. We do not wish the children to acquire a number of loose facts, but we wish to give them a "framework whereon to group the facts and ideas" they will gain in after life by reading and by experience. Hence from the child's earliest years it is desirable that order and unity should prevail in the child's studies.

This idea of establishing relationships among the school studies in order to obtain cohesion and unity of thought is not new.

Jacotot's Method.

Jacotot saw clearly that there are a thousand points of attachment between the various studies which the skilful teacher will seize upon. His great principle was "*Tout est dans tout.*"[1] He insisted

[1] All is in all.

that the pupil must learn one thing thoroughly in order to associate all other knowledge with it.

Froebel Demands Unity

Froebel and his followers were also convinced that unity must prevail, hence they arrange the children's studies round some particular point, such as the season of the year, or an interesting local event.

I quote the following schemes of lessons from *Students' Note-books* to illustrate this:

Schemes and Associated Lessons for Young Children.

SCHEME OF LESSONS FOR THE MONTH OF JUNE

Beans and Peas

Age of Children, 6 Years

I. *Literature:—*

1. Jack and the Beanstalk.
2. Little Pea-blossom.

II. *Object Lessons:—*

1. The pea flower and bean flower compared.
2. Development of pod and examination of pod.
3. The pea and bean plants compared.
4. Shelling and cooking peas.

These lessons were illustrated by many charming sketches in coloured chalks on the blackboard.

III. *Drawing:—*

1. Pea leaf and pea pod.
2. Opening pod showing peas.
3. Watering can to water the peas.
4. Dish to contain the peas.

Painting pea and bean blossoms were an additional exercise.

IV. *Modelling:*—

1. Leaf of the pea.
2. Pea pod.
3. Dish to contain the peas.
4. Cover of pea dish.

V. *Song:*—

The Little Gardener.

VI. *Paper Cutting and Folding:*—

Fences for training the peas.

VII. *Arithmetic:*—

Easy problems in addition and subtraction, using peas as concrete objects.

VIII. *Finger Work:*—

Chairs and tables made of softened peas and thin laths.

Some time before the lessons took place peas and beans were put into saucers of water and allowed to sprout. The children watched the process, and examined the sprouted peas and beans in the Object lessons.

Formal Studies are only Means to an End.

Reading, writing, and spelling are usually considered formal studies of a distasteful nature. "The children love stories and painting, but they hate spelling and reading," said a teacher of an infant school to me recently.

We must learn to recognise more clearly that reading, writing, and speliing are not *ends* in themselves, but only *means* to an end. We read because we want to get at ideas, we write because we wish to express them, and we use figures when we wish to calculate. It is only in school that any one is required to read merely to pronounce

words, to write and speak simply to compose sentences, and to reckon with figures which stand for nothing. Reading, writing, spelling, and figures may be made instrumental to thought from the very beginning.

Children's Observations Expressed in Language.

Here are examples of sentences composed by children during the Pea lessons. They were required to examine the sprouting peas and beans, and express their observations in language.

"This bean is large. It has been in water. Beans grow larger in water. The skin is thin. I took the skin from my bean, and I found a little sprout inside. To-day we planted our beans in a pot."

The sentences were *printed* on the blackboard by the teacher and used as a reading-lesson. Afterwards the children wrote them on their slates.

The sentences are the result of the children's own observations, therefore they represent a natural science lesson; but inasmuch as they are expressions of the children's thought they are a language lesson.

Ideas Interest Children.

The interest of the children was naturally very keen in these exercises. They experienced the same satisfaction which sometimes animates maturer minds in using language and writing to express their own thoughts and ideas.

Scheme of Lessons for young Children.

Here is another scheme of lessons for another month:

SEPTEMBER.

I. *Stories*:—

Paris and the Apple.

Atalanta and the Apples.

II. *Object Lessons* :—

1. Examination of an Apple and its parts. (Stalk, skin, pulp, juice, core, pippins.)
2. Examination of a pear and its parts.
3. Apple and pear compared and contrasted.
4. The apple tree.

Illustrations of apples and pears, and sections of apples and pears were skilfully drawn in coloured chalks on the blackboard. The children painted apples and pears and fruit trees in connexion with some of the lessons.

III. *Song Game* :—

"The Apples O, the Apples O!"

The Trees.

Drawing :—

1. Wall of the orchard.
2. Gate of the orchard.
3. Ladder.
4. Apple and pear.
5. Leaves of apple tree.
6. Barrel for apples.

Modelling in Clay :—

1. Apple.
2. Pear.
3. Cider cup.
4. Jam pot.

Arithmetic :—

If there are 4 apples in 1lb., how many are there in 6lbs.

If there are 100 apples in one barrel and 150 in another, how many are there in the two barrels?

And examples of a similar nature. Examples involving larger numbers were worked on slates.

Language, Reading, Spelling, Writing:—

"My apple is round, it has a stalk. The skin is green and rosy. Inside are eight pippins. The pippins are brown and smooth. We must not eat the core of the apple."

Co-ordination saves time and adds interest.

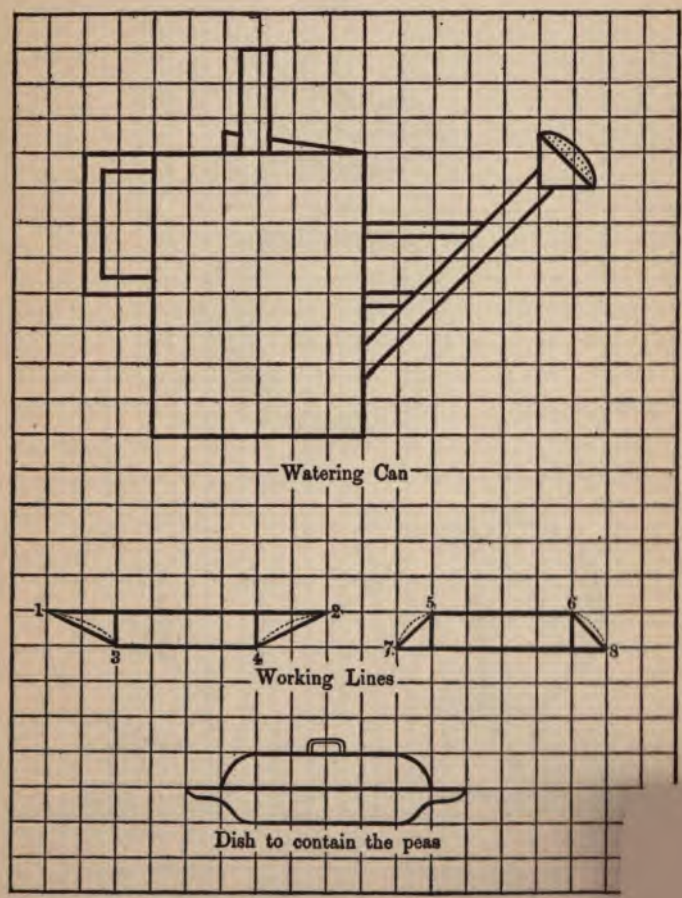
The general opinion of teachers who have attempted to co-ordinate the school studies shows that not only are time and effort economised by so doing, but that the quality of the work is better because the child has opportunity for mental activity at each step.

Dreariness of unrelieved Formal Studies.

The formal studies, mere mechanical reading, writing and arithmetic, have for many years been the fetish of our primary schools. To work sums with mechanical accuracy, to make no mistakes in dictation, and to read without stumbling over new words when the inspector comes, this has been in many instances the whole duty of the child. Children readily accept the ideal the teacher sets up before them, but it is not their fault if that ideal be paltry and poor. Children on the whole are good and docile if they are reasonably treated, and the history of our primary schools for the last twenty-five years has shown astonishing results in neatness of writing, and mechanical accuracy in arithmetic. Children imitate readily, and as a rule they prefer to do as they are told when subjected to the discipline of a big primary school; hence it is not surprising that apparently excellent results have been attained.

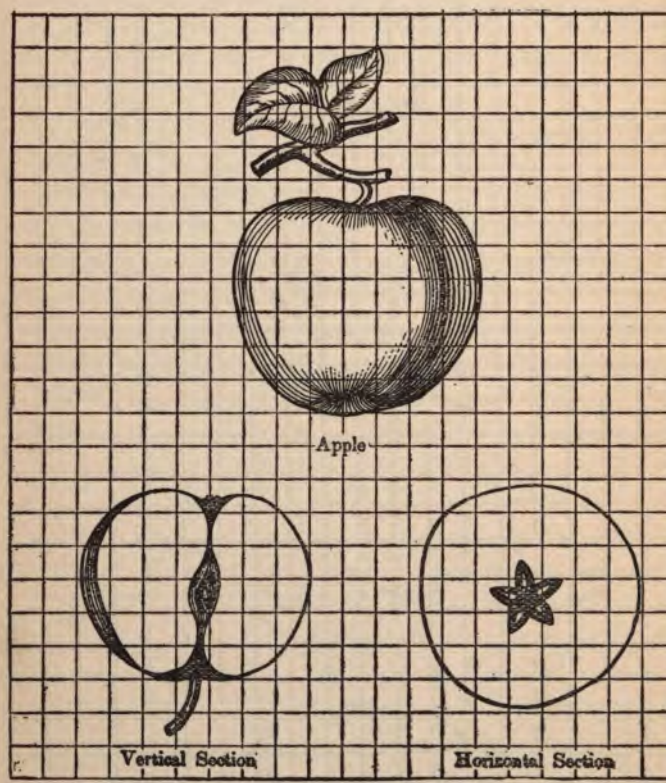
Drawing Lessons.

I.



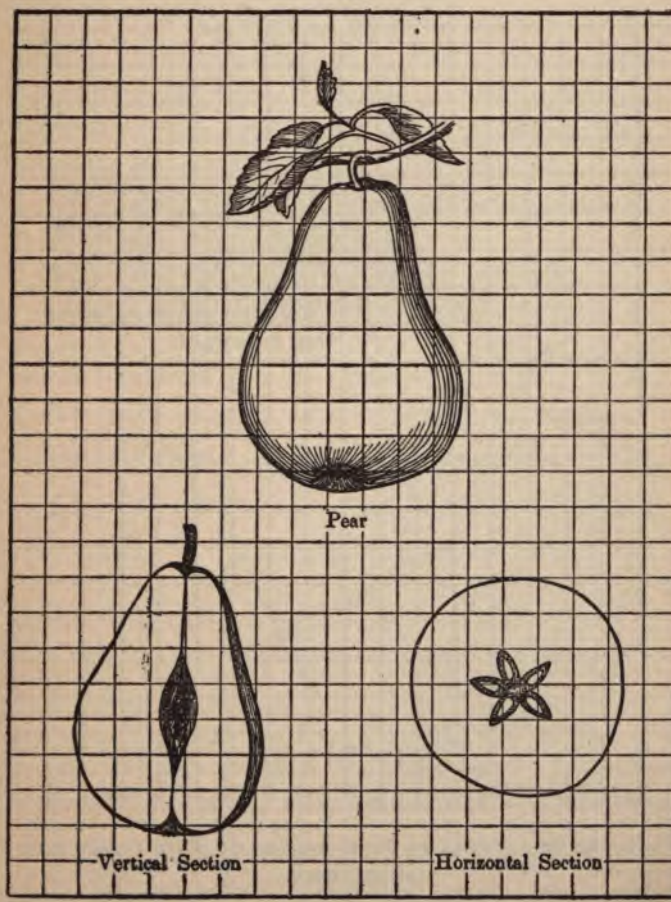
Colouring Lesson.

II.



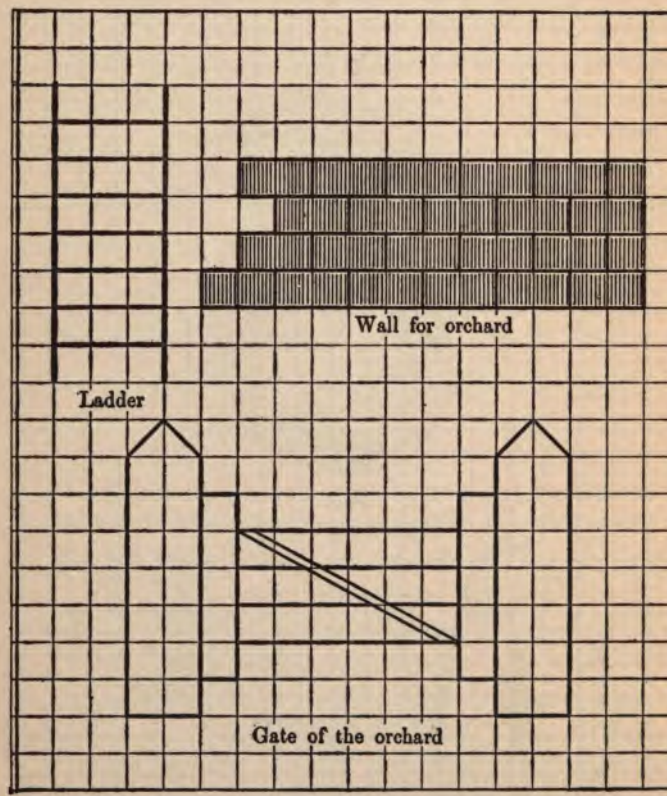
Colouring Lesson.

III.



Drawing Lesson.

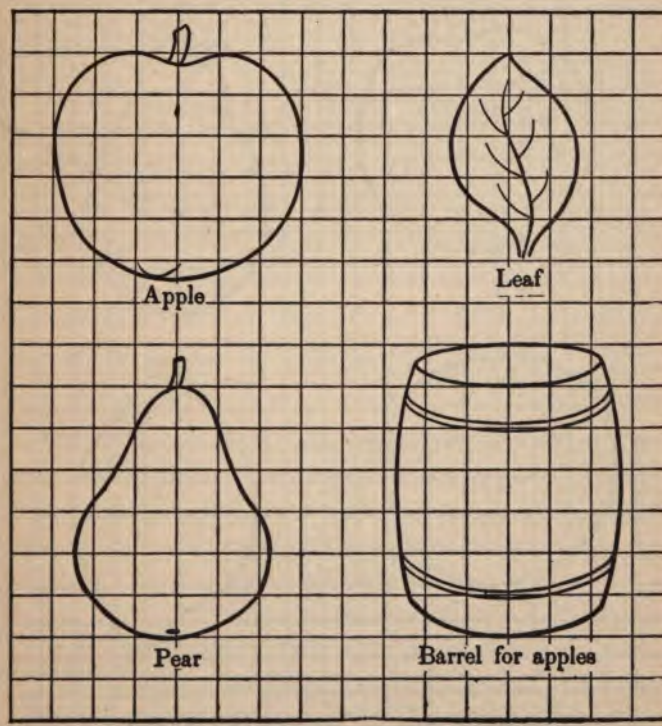
IV.



The teacher drew these on the Blackboard, and the children copied them on their slates.

Drawing Lesson.

V.



Literature is often served up to children in the form of learning notes, "picking out" nouns and verbs, and parsing and analysis. "I hate Wordsworth," a girl of fourteen said to me very emphatically. On enquiring into the cause of her hatred, I found that she had parsed and analysed "The Brothers," and she never wanted to see it again.

Geography often becomes a dreary series of lists of names of capes, bays, rivers, and mountains, and History a dismal outline of dates, kings, and battles. We must give the children more than mere bony skeletons of facts, we must endow them with thought, life, and vitality. The teacher who drags out weary days on routine's treadmill will never be able to make the school studies "full rich, throbbing with the life of the world." Nor will the teacher who pins his faith to text-books and examination tests be able to arouse the child's interest in the wonders of the world around him, and to impress upon him the "moral significance of human history."

"All instruction should graft the most essential parts of its subject firmly into the very being of the human mind; then join on the less essential gradually, but uninterruptedly, to the most essential, and maintain all parts of the subject in one living, proportionate whole."—PESTALOZZI.

"Facts and ideas have a real and useful influence over the mind only when the mind systematizes and co-ordinates them with other facts and ideas as they are produced."—GUYON.

"Pour water rapidly into a vessel with a narrow neck, and little enters; pour slowly and but little at a time, and the vessel is finally filled."—QUINTILIAN.

"The true object of intellectual education is to instil, with the least possible effort, the greatest number of generous and fruitful ideas."—GUYON.

"When one finds in certain courses of study, history of the Middle Ages, reading from Herodotus, geography of America, and German literature since Lessing, side by side, one ought to be glad if the youth does not trouble himself about these things, but withdrawing his interest, devotes his energies to something else."—REIN.

"Link the teaching of the new with facts already known with which the new has a real relation of likeness or unlikeness, so that the growth of knowledge may be an organic growth."—LAURIE.

CHAPTER VIII

CONCENTRATION OF STUDIES

Herbartian Concentration of Studies.

As we have seen, the association of studies is no new idea, but it has remained for the Herbartians to work it out in detail and put it into practice throughout the entire school course. In their scheme for the Concentration of Studies, those studies which require mental activity on the part of the child predominate, while the mere formal studies are secondary. The latter, however, are not neglected, though they are not unduly worshipped. What the Herbartians call Concentration is concerned with the natural relations which exist between the various studies. There are many natural connexions between literature and history, history and geography, geography and natural science, natural science and mathematics; moreover, drawing and architecture can be used to intensify the interest in history and literature, and singing can serve to stimulate this interest, while geometry can help to elucidate geography and natural science.

Natural Relations Exist between Studies.

That these natural relations exist every reasonable teacher will admit, but we rarely attempt to reckon with them in arranging our school courses.

The Herbartians insist on bringing out all possible natural relationships in t

Isolated Ideas are Easily Forgotten.

Psychology shows that isolated ideas are feebly impressed and easily forgotten, because they are "writ in water" as it were and cannot endure. Therefore isolated facts taught in an inconsequent fashion have no lasting influence on the mind of the child. Again, the child must make a new effort each time to take in a totally new idea, and the difficulty of doing this entails waste of energy, and results very often in his only half understanding the new matter. These vague ideas half understood are easily obliterated. We are all ready to admit that a small amount of knowledge closely articulated and thoroughly understood is worth more than a large amount loosely related and only half understood, yet teachers rarely arrange the subjects so that they shall bear upon and throw light upon each other.

Confusion of Ideas in Schemes of Study.

It is not uncommon to find such incongruities in a school time-table as the following—History of Wellington, Geography of China, Reading, Drake's Voyages, Literature, *Julius Cæsar*, and Science Lessons on Artesian Wells. The children study all these at the same time, and disharmony of thought must prevail. It is the duty of the teacher, says Dr. Rein, to convert such a *confusa varietas lectionum* into an *ordinata varietas.*

Order must Reign.

"All conceivable expedients should be devised in order that energy may be economised and intensity in the results of instruction be attained through unity in the foundations, association of related materials, and the combination of mutually complementary elements."

Concentration Increases Interest and gets rid of Superfluous Matter.

One readily sees various advantages in concentrating the subjects of study; interest is increased,—not merely transitory interest, but true, permanent interest, memory is strengthened, and a logical memory is developed, and the pressure of an overwhelming number of subjects is taken off the time-table.

Concentration will help us to proportion our subjects according to natural relationships existing between them and to get rid of quantities of irrelevant subject-matter which text-books are constantly offering. The Herbartians urge the concentration of school studies on ethical and psychological grounds.

Ethical Value of Concentration of Studies.

Ethical, because strong and effective action and consistent conduct depend upon the unity of the mind. A man of strong and consistent character decides promptly and resolutely because there are many close connexions between the ideas in his mind; but if his mental content were made up of loose and unattached experiences, he would find it impossible to call them properly together in order to arrive at a decision.

"As soon as we admit that it is largely ideas control conduct, says Dr. McMurray, . . . we see the necessity of great unity among one's ideas in order to secure safe, consistent, and firm action." "The educator," says Prof. Rein, "must endeavour to collect the spiritual forces of the pupil in order that they shall not be dissipated, but through their concentration may take effect in an energetic and powerful activity. No moral character is conceivable without such concentration of forces."

Psychological Reason for Concentration.

To understand the psychological grounds, we must remember that the Herbartians believe that the contents of the mind are not original; the individual brings with him tendencies and dispositions, but the mind to begin with has no original activity. "The ego[1] is not an original but a developing entity; hence it is also a changeable being." "The mind is a self-active, concentrated force," which is ever striving after unity. Its tendency is to simplify and unify all the various ideas which it gains from experience and intercourse. Instruction must step in and assist in this unification, for we overestimate the "constructive activity" of the young mind if we assume that it is capable of establishing all connexions unaided. Even in grown men and women the concentrative powers of the mind are not strong enough to produce unity of consciousness.

"Unity of consciousness is the primitive foundation of character," therefore "instruction must be directed towards establishing this foundation." Heterogeneous ideas and disconnected thoughts are obstacles in the way of forming unity in the child's mind. One of the most important duties, therefore, the school has to fulfil, is to bring all the child's experiences into close relationship, to connect the home-life and school-life with the child's studies, so that harmony and unity may result.

The Herbartian Theory of Concentration.

Having decided that studies are to be concentrated, the question before us is how to do it. Much discussion has arisen around this point, which we cannot enter upon here. Ziller's method

[1] Dr. Rein.

of concentration is usually adopted by the Herbartians. The core or centre of instruction is chosen from the material which has the greatest ethical content. This concentrating centre, therefore, around which all other studies are to be grouped, and with which they are to be co-ordinated, must be the humanistic material—history, literature and art. These educate the ideas on humanity, they train the judgment, morality, and taste, the religious sentiment, and the individual and social sympathies. This centre, which the Germans call *Gesinnungs-stoff*, or material for training character, is pre-eminent in the course of instruction; the other subjects are subordinate, inasmuch as they follow its lead. I will first give some details from German time-tables showing Concentrating Schemes, and then give particulars concerning some experiments worked out with English children.

TIME TABLE FOR A PRIMARY SCHOOL

HUMANISTIC SUBJECTS (LIFE OF MANKIND.)

Time.	I. Character Forming Instruction.		II. Art Instruction.			III. Language Instruction.		
	Bible History.	Secular History.	Singing.	Drawing.	Modelling.	Reading.	Composition and Grammar.	Writing.
I. School Year.	Church Festivals.	A collection of epic fairy tales.	Songs in connection with home life and subjects of lessons.	Painting and drawing objects in connection with the history and stories and home life.	To make objects in connection with the lessons; this is a continuation of the kindergarten.	Practice in speaking and pronouncing.	—	Learning to write in German or Latin characters in connexion with the Reading.
II. School Year.	Christmas, Easter, celebrated in the School.	Robinson Crusoe.				Reading in connection with *Robinson* and lessons.	—	
III. School Year.		Thüringen Sagas.				Readings in connection with the lessons.		Practice in the script chosen.
IV. School Year.	Patriarchs, Judges, Kings.	Nibelungen, Gundrun.	Songs in connection with the school work from 4th to 8th year.	Painting and Drawing.	Making forms in connection with drawing, modelling in clay, and casting in plaster. Church decorations of various styles.	The reading lessons are taken from :— 1. The Concentration Reading Book. 2. The Bible and Testament. 3. The book of original sources. 4. Historical Stories.	Compositions in connection with the instruction and school life. The grammar is closely connected with the composition exercises.	
V. School Year.	Prophets, Jesus Christ.	German History to Otto I.		Romanesque styles in neighbourhood.				Learning to write in both German and Latin characters.
VI. School Year.	Life of Jesus.	Otto I. to Rudolph of Hapsburg.		Gothic styles in neighbourhood.				
VII. School Year.	Life of Apostle Paul.	Rudolph to 30 Years War.		Transition period from Middle Ages to Rennaissance.				Further practice in both scripts. Letters and business forms.
VIII. School Year.	Reformation, Luther, Church *Catechism*.	30 Years War to 1870–71.		Renaissance to Modern Times.				

[1] These lessons are all taken in connexion with practical ob

OF EIGHT CLASSES IN THURINGIA.

NATURAL SCIENCE SUBJECTS (LIFE OF NATURE).

I. Geography.			II. Natural Science.	III. Mathematics.		
Mathematical Geogr.	Physical Geography.	School Journey.		Geometry.	Arithmetic.	Hand work.
Observations in the home district and astronomical obs.rvations in connection with other work.	Rambles and observations in the immediate neighbourhood.	Neighbourhood of Jena.	Home observations (School garden) forest life, etc.	—	1 to 10 Addition and Subtraction.	Making objects in connexion with Humanistic Material, Robinson's [illegible] pottery etc
				—	10 to 100 Multiplication and Division. Only easy examples.	
	Valley of the Saale and Unstrut and Thüringia.	Saale Valley and Unstrut Valley.		—	Difficult examples of Multiplication and Division.	
	Rhine, Danube, South Germany.	Thüringian Forest.	Hunting and [1] pastoral life, animals of the hunt and cattle. Wood and meadow.	Cubes, Columns, Oblong, Four-sided figures, Pyramids.	The four Compound Rules. Concrete and abstract examples.	g in clay and casting in plaster, ornamentation from doorways, arches, etc., nection with historical material. Models of churches, etc., in cardboard.
	North and Middle Germany, Weser, Elbe, Oder.	Harz Mountains.	Cultivated [1] lands, Fruit Orchards, Vineyards, Cornfields.	Six and eight-sided figures, Cylinder, Cone, Sphere, Truncated pyramids.	Application of the rules. Decimals.	
	Alps, Italy, Switzerland, Austria, Hungary.	Rhön-gebirge.	Villages, Small Towns, Buildings, Industries, Mining.	Drawing and calculating spacial relations.	Vulgar Fractions.	
—	Portions of the Earth outside Europe.	Luther towns, Eisleben, Mansfeld, Magdeburg, Wittenburg.	Large Towns, Water as a means of communication, Laws of health, Hygiene.	Perspective drawing and measurement of solid bodies.	Application of the rules to ordinary affairs of life. Rule of Three.	
—	Prussia, Scandinavia, France, Russia, England, the German Empire, and Colonies.	Leipsic and Erzgebirge.	Large Towns, [1] Electricity, and	Measurement of geometical [illegible] and	Compound Proportion.	

vations made during walks.

"The good school is everywhere the same, whether it be moderately large as the grammar school, or far-reaching as the high school and college, or as small and narrow as the elementary and village school. It always nourishes the same interests; it always leads to thinking as well as observation; it always points to the beautiful in the world and the sublime above it; it always awakens sympathetic participation for domestic and civic weal and woe."—HERBART.

"If a pupil of the elementary school by the time he is twelve years old is able to acquire both complete skill, as well as proper emphasis in reading . . . and gains in his fourteenth year a proper handwriting, he has done well enough, that is as regards reading and writing. However the development of his conceptions, the broadening of his mental range through the geography of the country and the topography of the region where he lives, together with knowledge of the natural products and the intercourse of men that live there; exercises in mental arithmetic and measuring of lines and planes, vivacity of religious feelings, and the entire preparation for the entrance in the church community—all this sets the elementary school a great task, beside which it cannot think of merely teaching reading and writing as rapidly as possible."— HERBART.

"The true worth of instruction—that is to say its vitalizing influence on the scholar's mind—depends less than is commonly supposed upon the particular subject through which the mind is approached, and more upon the stimulative method in which the mind is roused. School curricula, no doubt, need to be in some cases extended, and in others restricted, as regards the number of subjects to be taught to the particular scholar at the same time. But it is, after all, not so much in the remodelling of curricula as in the improvement of methods . . . that educational progress must in future consist."—*Royal Commission on Secondary Education.*

CHAPTER IX

CONCENTRATED SCHEMES WORKED OUT WITH CLASSES IN AN ENGLISH PRIMARY SCHOOL.

ROBINSON CRUSOE CONCENTRATION SCHEME.
STANDARD I.

THESE lessons are taken from students' note-books. They were given to Standard I. children in a Board School; the age of the children being seven years.

History of Robinson Crusoe.

I. Literature and Language.

1. Robinson's home; his father and mother, and the sea-shore.

2. Robinson watches the ships unloading in the harbour, and speculates on foreign parts.

3. Robinson at school. He dislikes lessons and wishes to go to sea.

4. Robinson goes on board the ship with his friend. Sails down river.

5. Robinson's voyage. Sea sickness. Storm.

6. The shipwreck. Robinson's escape.

7. Robinson's first night on the island. He sleeps in a tree; he hunts for breakfast.

8. Robinson climbs a hill and finds he is on an island.

9. Robinson visits the ship and brings back many useful things.

10. Robinson finds a cave and makes a house.

This series of lessons were given by students in training. They followed the general plan adopted in the German schools.

II. Object Lessons. 1. The sea. Robinson's home was on the sea-shore.

2. A ship from foreign parts. (What was it likely to contain?)

3. Further details of the ship. (Anchor and sails.)

4. The Union Jack. (Robinson's ship carried this flag.)

5. Lifebelt and lifebuoy. (In connexion with the storm.)

6. Lifeboat. (In connexion with shipwreck.)

7. Shell-fish (oysters and mussels). (Robinson seeks food.)

8. An island
9. A raft
10. A cave

} In connexion with Robinson's experiences of islands, rafts, and caves.

III. Drawing Lessons. A series of objects were drawn in connexion with the story and the object lessons: A boat, an oar, a ship, an anchor, the Union Jack (this was painted), lifebelt, lifebuoy, an oyster, a cave, an island, Robinsons' house.

IV. Manual Training. 1. A model of the sea-shore. *Apparatus*: Tin tray, sand, pebbles, and dried seaweed.

2. Cutting out and making the Union Jack in coloured paper.

3. A model of Robinson's island. *Apparatus*: Tin tray, clay, sand, moss, and stones.

4. Robinson's house. This was an elaborate model, in which the children took great delight. Pieces of rock

formed the cave. A tent was built with pieces of calico for sail-cloth. The fence was made of twigs and string, and the children made a tiny ladder for Robinson to climb the fence.

5. Robinson's pottery gave an opportunity for lessons in clay modelling, in which rough clay pots were made.

V. Reading. Passages from the child's *Robinson Crusoe* and from a general Reader on the matters discussed in object lessons.

VI. Writing. Simple composition on the subject of the lessons. Here is one composition. The children framed the sentences which the teacher wrote on the blackboard and the class copied afterwards.

"Robinson spent his first night in a tree. In the morning he was hungry, but he saw nothing around him but grass and trees without fruit. On the sea-shore he found some shell-fish, which he ate."

VII. Arithmetic. The usual addition and subtraction sums. Many mental examples and simple problems dealt with Robinson.

VIII. Singing Recitation. Suitable sea-songs were chosen, "I am monarch of all I survey."

Method Followed in these Lessons. A detailed lesson of this series will be found in a later chapter.

The lessons lasted about forty-five minutes each. The teacher did not attempt to relate the story, she developed it with the children. She put leading questions and drew out all the children's experiences. Being town children, their experiences of the sea-shore were very limited, and there was much to correct and amplify. The drawing and manual training lessons were greatly enjoyed.

The children entered completely into Robinson's life, and appreciated all his difficulties, and were eager to suggest means of overcoming them.

Under ordinary conditions the story of Robinson Crusoe would be the leading feature in the work of a whole year. Our series lasted about six weeks, and we only had the children occasionally. In comparing the English children with the German classes I have seen studying Robinson Crusoe, I was convinced that the eagerness and interest was as keen among the children here as in the German schools. I was sorry I could not continue the adventures of Robinson further. One easily sees what a wealth of material there is in the further development of the story.

Robinson's discovery of corn, and of fire, his attempts at making pottery, his clothing, his little farm, offer endless matter for familiar discussions with the children.

The Spanish Armada Concentration Scheme.

Standard VI.

These lessons were given by seven students during one term, to a class of boys and girls in Standard VI., whose ages varied from 12 to 14 years. The same students had given the series of Columbus lessons mentioned in a later chapter to the same class the previous term. In choosing this particular period we considered its fitness not only from an ethical standpoint, but whether it had sufficient literary material connected with it, and whether it afforded us scope in the Natural Science direction. We considered the subject itself, the defeat of the Spanish Armada, an excellent topic to put before English children. The period is one of the most glorious in English history, both with

regard to national achievement and individual effort. The exploits of Drake and his fellows illustrate that spirit of daring which has always characterised English sailors, and the sentiment of patriotism which it is always desirable to encourage in the child is admirably fostered in this aspect of the Elizabethan age. It may be enforced by example as well as by precept in the story of the self-sacrifice of private individuals, and in the loyalty which caused the English Roman Catholics to put their duty to their country before their religion.

The literature around the subject is no less interesting. Macaulay's fragment forms a stimulating introduction to the story of the fight. Tennyson's ballad, "The Revenge," though not concerned with the Armada itself, treating in fact of a later incident, is eminently suitable for incorporation into the scheme. Its hero had fought with distinguished success against the Armada, and the exploit described in the poem is one of the most daring ever performed even in that adventurous age. In the region of prose there is even more suitable material. The account of Drake's voyages in *Hakluyt*, the description of the famous game of bowls in *Westward Ho!* and the picture of the fight in Mr. Froude's *History*, are all excellent reading material.

I. History Lessons.

1. Comparison between England and Spain in the sixteenth century and in present day.
2. Dealings of England and Spain with the Netherlands.
3. England attacks Spanish colonies and treasures.
4. Minor causes of hostility.
5. Immediate cause of war.
6. Preparations for war in both countries.

7. The fight and defeat of the Spanish Armada.

8. The results to England and Spain of this defeat.

Authorities consulted for the preparation of these lessons :—

1. Froude's *History of England*, vol xii.

2. Gardiner's *Student's History*, vol. ii.

3. *Queen Elizabeth*, by E. S. Beesley.

4. *Defeat of the Spanish Armada* (Intro. to vol. i.), being the State papers published by the Navy Record's Society. Edited by J. Knox Laughton.

II. History Reading Lessons.

1. Sources of Spanish wealth in the sixteenth century.

2. How the English sailors "vexed the King of Spain."

3. Drake's voyage round the world.

4. Amyas Leigh's journey, from *Westward Ho!*

5. The fate of the Armada after the fight, from Froude's *Spanish Story of the Armada.*

III. Literature.

Tennyson's "Revenge."

Macaulay's "Armada."

Lessons: "The Revenge."

1. How an English seaman dealt with a great danger (stanzas 1 to 3).

2. How Sir Richard Grenville met the foe (stanzas 4 to 7).

3. Stanzas 8 to 10.

4. Stanzas 10 to 14.

"The Armada."

5. How the news of the Spanish fleet spread quickly over England. Explanation of poem.

6. Reading the poem.

IV. Grammar and Composition.

Lessons on metaphor, simile, and personification.

Examples taken from the literature :—

"And a pinnace *like a fluttered bird* came flying from far away.

So Lord Howard past away with five ships of war that day,
Till he melted *like a cloud in the silent summer heaven.*"

"Till like volcanoes flared to heaven the stormy hills of Wales."

"And haughtily the trumpets peal and gaily dance the bells."

"With his huge sea-castle heaving."

"Took the breath from our sails and we stayed."

"And the lion lay there dying, and they yielded to the foe."

"Look how the lion of the sea lifts up his ancient crown."

"And with one start and with one cry the royal city woke."

"And the red glare on Skiddaw roused the burghers of Carlisle."

Composition.

The children wrote essays on various points in the lessons. "The beacon fires of England" and "The first Englishman's voyage round the world" were attractive subjects.

This Composition required three Lessons: 1 Introduction, 2 Essay Writing, 3 Correction and Discussion.

Method.—The teacher revised the story with the children first, and the heads were written on the blackboard. The heads of Drake's voyage were as follows :—

1. Reasons for the voyage.
2. From Plymouth across the Atlantic.
3. Through Magellan's Straits.
4. Raids on Spanish towns and treasure ships.
5. Return voyage.
6. Arrival home.

Drawing. A great many interesting details were brought out in the drawing lessons. Sword hilts, shields, pikes, the naval standard of England, the Spanish flag, and the various kinds of beacons used, were described and drawn.

A contrast was made between a Spanish galleon and an English war-ship of the sixteenth century. These were afterwards sketched on the blackboard, and the children were required to copy them.

Geography. The Atlantic and Pacific Ocean, colonies of Spain, Spain, the Netherlands, the coast line and kinds of rocks of England, the beacon heights, the English Channel, the Bay of Biscay, Currents, Winds and Storms, were some of the subjects included in the scheme.

The students made a huge relief map in clay of Western Europe, including the British Isles, Spain, France, and portions of the Netherlands. This model was used constantly throughout all the lessons. The mountains of the British Isles were all marked, and in the lesson on Beacon Fires a tiny piece of wax candle was set alight on each, and the position of the Spanish Armada was shown in a fleet of tiny paper boats coming up the Channel.

Natural Science. A wide choice from a whole series of subjects could be made in connexion with these lessons, *e.g.*, Gravitation, Ship's Compass, Magnetism and Electricity, kinds of Rocks and Minerals, Storms, Gunpowder, Gold and Silver Mining, Study of Heavens, Study of currents of the Ocean, are all appropriate subjects in connexion with Drake's voyages, Spanish treasures, and the fight and defeat of the Armada. The lessons prepared for our course were—

The Beacon Fires.
The Composition of Flame.
Lighthouses.
Telegraph Communication.

The development from the rude stacks of wood used in primitive beacons to the pole and iron-brander, containing a tar-barrel, was sketched. This led to a comparison with modern methods—Lighthouses, and Telegraphic Communication. Lessons on the Nature of Flame, the Luminosity of Flame, and the Safety Lamp were also given. These lessons involved many experiments which were performed with the children.

Arithmetic.

This subject necessarily follows a logical sequence of its own, but as mathematics presents the formal side of Natural Science, connections are constantly occurring. In working out problems of latitude, for example, figures are required. The children in the present instance are interested in the doings of Drake, and their interest is increased if they are required to make the same kind of calculations that the statesmen and navigators would have to make in Drake's day. It may be urged that these questions are not practical, but the calculations which Drake and his men had to make every day are more practical than the problems concerning the impersonal A and B, so familiar to the arithmetic student.

The state papers of the Armada period give a fund of information concerning the manning of the ships, the rate of pay of the men, the necessary provisions, the prices of the food, the variations of diet, "Meat days" and "F days," also details concerning the weight of the g amount of shot necessary, and the size of the sl

make actual calculations from these details is a valuable exercise in itself, but it is rendered more so when these calculations are compared with similar details of the present day.

The rule of proportion is the stage in arithmetic at which the children have arrived, therefore suitable comparisons can be easily made of relative prices, sizes of ships, and rates of sailing. These facts become more striking if the teacher presents like calculations concerning a modern war ship.

The following are some of the examples worked. The figures are actually taken from the State papers of the time :—

"If the cost of provisions for one day for the 240 men in *The Revenge* was £8 5*s*., how much would it cost for the 420 men of the *Ark*?"

"If the wages of a sailor were 42*s*. for three months, how much would he receive for five months?

The Armada will not aid the child in learning Proportion. The only way to master the rule will be to take it as pure mathematics and proceed according to the "law of successive clearness." But the children may be led to a general rule in Arithmetic by having their curiosity aroused as to the way of performing calculations quite likely to be required in ordinary life; and these lessons formed an interesting introduction to a discussion of ratios mathematically treated.



"There is but one natural method for all sciences, arts, and languages."—COMENIUS.

"Percepts without concepts are blind; concepts without percepts are empty."—KANT.

"There can be no system, no order, no relationship without clearness in single things."—HERBART.

"Strange as the arrangement of instruction according to the formal steps may appear at first sight, yet it is by no means entirely new. It asserts itself in every good lesson in a greater or less degree, only, the mere empiricist bases it not upon psychology, which must permeate the entire process of learning, but rather upon a certain instinct of tact, which he has acquired by long experience, the reasonableness of which, however, he is unable to demonstrate. . . . Every step in the lesson is exactly prescribed by psychological laws solidly established. A highly important matter, which previously had been left to the care of a feeling of happy tact, has, by one stroke, been brought into such clearness, that it is capable of illuminating the entire method of instruction."—Prof. REIN.

"It is a chief business of education to pass from distinctly perceived individual notions to clear general notions.'"—PESTALOZZI.

"It is, perhaps, the most frightful gift which an evil genius makes to his age; knowledge, without capacity to do."—PESTALOZZI.

"The humblest school-science consists of generalizations, or aims at them. Unless the pupil is led, step by step, to approach these through particular observations, full and exact, the conclusion, be it in the form of a generalisation or a formula, is not knowledge any more than the case which contains a diamond is the diamond."—LAURIE.

CHAPTER X

PRESENTATION OF MATTER. THE THEORY OF THE FIVE FORMAL STEPS

Herbart's Steps.

We have considered the selection and articulation of subject matter, we must now discuss the method of presenting it to the child's mind. Knowledge must pass through certain stages before the mind can clearly apprehend and assimilate it. These stages are called by the Herbartians the "five formal steps."

According to Herbart these steps are,—

Clearness { Analysis. / Synthesis.
Association.
System.
Method.

Rein's Five Steps.

Prof. Rein and others have developed Herbart's ideas, and put them into practice in the schools.

Rein sums up the five steps as follows,—

1. Preparation (Vorbereitung).
2. Presentation (Darbietung).
3. Association (Verknüpfung).
4. Formulation, or Generalization (Zusammei
5. Application (Anwendung).

These steps are not new. Many experienced teachers will say they only indicate the natural method of teaching.

They are natural because each stage follows definite psychological laws.

Method Wholes containing a general truth.

The material in each school subject is mapped out into a number of convenient sections, each of which is called a Method Whole (Einheit) because it contains one clear general truth. In working through the stages of the lesson the pupils arrive at this truth for themselves. In formal grammar and arithmetic the general truth is a definition or a rule, and can often be reached in one lesson of reasonable length. In history, language, and geography, the general truth may have an ethical or political signification, and it may require several lessons to arrive at it. Therefore, it is impossible to give isolated and unrelated lessons. I have heard a teacher dispatch the Spanish Armada in one lesson of twenty minutes.

Her notes were neatly written out and arranged under three headings,—

(*a*) Causes.
(*b*) Action.
(*c*) Results.

She spent five minutes on each of these heads, and she carefully kept a whole five minutes for Recapitulation.

Her lesson was said to be a success, and in so far as she selected a few meagre but striking facts, arranged them neatly, and got through them quickly, and made all the children sit still the while; perhaps it was, but the less said about the influence of such a lesson on the minds of the children the better.

Begin with particulars and lead up to the general truth.

Most thoughtful teachers agree generally that the method of beginning a lesson with individual notions and leading up to a generalization is the true method.

"From the particular to the general," "From the simple to the complex," "From the concrete to the abstract," "From the percept to the concept," are commonplaces to all students who have glanced through the pages of any work on the theory of teaching. It is now recognised that the older method of teaching, which consisted of stating rules and definitions, to be committed to memory, was putting the cart before the horse. Children have great facility in using words and repeating propositions that formulate knowledge, and the teacher is constantly deceived. Herbert Spencer expresses this forcibly. "General formulas which men have devised to express groups of details, and which have severally simplified their conceptions by uniting many facts into one fact, they have supposed must simplify the conception of a child also. They have forgotten that a generalisation is simple only in comparison with the whole mass of particular truths it comprehends; that it is more complex than any one of these truths taken singly; that only after many of these single truths have been acquired, does the generalization ease the memory and help the reason; and that, to a mind not possessing these single truths, it is necessarily a mystery." Our theory of the five formal steps follows the approved method, it presents many facts, and finally unites them into one fact.

Statement of the Aim.

The lesson is introduced to the child by a statement of the aim. This is important.

The aim is stated because the child must clearly know what he is going to do. The method of introducing the lesson by a series of mysterious questions only confuses the child, and often puts him on the wrong track. An Inspector of Training Colleges once told me of a young man who, in introducing a lesson on the powers of the magnet, proceeded to throw small iron nails about the room. He then asked his class how he was to find them, and appeared annoyed when they gave him the very obvious reply, "Get a candle." He expected them to say, "Get a magnet"; and as they did not realize his expectations his lesson suffered.

Again, a clear statement of the aim arouses in the child expectation, which is a favourable condition for promoting real interest; it also tends to drive out of the child's mind irrelevant ideas, and bring into prominence all relevant ideas connected with the subject. "We shall now consider the dealings of England and Spain with the Netherlands," clearly stated at the beginning of the lesson, brings up the child's ideas connected with England, Spain, and the Netherlands

The children are identified with the teacher in the search for knowledge when the aim is well stated, and their co-operation and activity is enlisted in the problem before them.

Step I. Preparation. The first step is Preparation; here the child's mind is prepared to receive the new matter. Our knowledge depends as much upon what is within us as upon what is without us; hence the teacher's labours in forcing new knowledge from without are wasted, unless the related ideas and the attitude of the minds before him are favourable to the reception of the new.

Apperception. What the Herbartians call Apperception explains how the mind receives new knowledge. Apperception may be generally defined as the power of understanding new ideas by means of related old ideas already in the mind. The story of Alfred and the cakes, "although not a noteworthy historical anecdote, serves to fix the name of the King in the child's mind, who would not so easily remember the Peace of Wedmore. Eating he knows more about than the making of treaties."

The familiar is understandable, and we are interested in it.

Hence we recognise again the value of concentrating the child's studies; the connexions established in this way assist the apperceiving powers of the mind.

The first step then consists in calling into consciousness the ideas which bear upon the subject in hand, of separating the consequent from the inconsequent ideas, and of arranging them. This is called collecting and arranging the *apperceiving masses.*

"The apperceiving ideas must frequently be collected and arranged. If we passed the material but once, and in the order in which it would occur by chance, many contradictions would remain unreconciled, and many principal thoughts would not seldom be lost in a mass of incidentals."

The old knowledge must be constantly used in order to find points of attachment for the new. Knowledge which lies unheeded in the background of the mind, and is never called into activity, becomes lifeless. That is why children forget what they have learned so soon after they leave school, and have no curiosity or desire to learn further.

The information they received may have enabled them to pass examination tests, but it never entered into combinations with other masses of ideas in their mind. "Unless the mind has leisure to work by itself on the 'stuff' or matter which is prescribed by the teacher, the thinking faculty upon which all progress depends will be paralysed, and dead knowledge will be substituted for living. The mind will have no power of expanding from within, for it will become a passive recipient of knowledge, only able to discharge again what has been stuffed into it, and quite powerless to make fresh combinations. Cram is the rapid acquisition of a great deal of knowledge. Learning so acquired has less educational value than the public believe, for it does not promote, but rather tends to destroy, the active and constructive powers of the mind."

Preparation then calls up the old ideas as living forces to seize upon the new, as Lazarus says, "The old ideas stand like well-armed men in the inner stronghold of the mind, ready to sally forth and overcome or make serviceable whatever shows itself at the portals of sense."

"If[1] the preparation has been of the right kind, the reception and appropriation of the new will take place with ease and certainty without lengthy explanations and interrogations, so that the pupil according to the laws of psychology feels himself mentally exalted, the instruction thus proves educative."

Step II. Presentation. This step consists in laying the new matter before the pupils. The manner of presenting the new matter depends upon the subject.

[1] Charles Ufer.

In History, Literature and Geography lessons the matter is related by the teacher, or developed by means of a series of skilful questions. The latter calls for more skill on the part of the teacher and more thought on the part of the child. The pupil is not told what Philip of Spain did in certain circumstances, but he is asked what Philip was likely to do.

In Grammar and Arithmetic, examples are considered which lead up to the definition or rule we are aiming at.

In an Object lesson, the object is put before the child and he is directed how to examine it. The problem is presented in Science and Mathematics, and teacher and pupils work through the experiments or calculations together which lead them to establish their law or generalization.

One thing at a time is the ruling principle of this part of the lesson. The whole cannot be given to the pupil in a mass, else he would gain only a misty general impression, which is valueless. Single points must be presented, mastered, reflected upon, and summed up and stated by the pupils before another point is touched upon. What the Herbartians call the law of successive clearness demands that the matter be divided into "small logically connected sections" and the children shall concentrate their undivided attention upon each of these sections separately, and reflect upon each point until it is mastered. As Lazarus says: "Thinking requires time, it is therefore a great pedagogical mistake if teachers—as is now generally done—urge their pupils to answer rapidly, and praise those who immediately have an answer ready. This causes everything to be lowered to a mere effort of mechanical

memory. The pupil must have time for individual contemplation, for deep and energetic thought-labour."

In the first lesson on Flame, the presentation was ararranged in three divisions:

I. *Experiments:* 1. Show a burning candle.
2. Show Bunsen burner with luminous flame.

Collected observations from the class:

(*a*) The flame has two differently-coloured parts.

(*b*) They are conical in form.

Recapitulation. A Flame consists of two separate cones.

II. Experiments with Siphon tube and Candle flame.

Observations collected.

Recapitulation. The outer cone consists of burning gas, the inner of unburned gas.

III. Experiments with pieces ot paper and wire gauze, and a match with its head inside the inner cone.

Observations collected.

Recapitulation. The outer cone is hotter than the inner one.

The general recapitulation of the whole.

A flame consists of two cones, the outer cone consists of burning gas and is hot, the inner cone consists of unburned gas and is comparatively cool.

When the whole has been studied, an entire recapitulation is required from the pupils in their own words, for knowledge is not a possession unless it can be expressed in the words of the owner. A fair amount of drilling is required to fix the facts in the children's minds. The necessity of this kind of drill was recognised by the Jesuits

as seen in their favourite maxim, "Repetitio mater studiorum."

At the end of the second step we have completed the first psychological process, that of apperception, but only half the task of teaching is done. We must rise from the individual to the general. With the third step we begin the process of abstraction. Certain facts are fixed in the child's mind, and from these facts we must rise to the law or cause which governs them, without this our lesson is meaningless, for "percepts without concepts are blind."

Step III. Association. The facts are given, and the teacher proceeds to discuss them with the children, and to compare and contrast them with known facts in order to lead the pupils to form the general truth for themselves. All teachers are familiar with the kind of questions which lead the children to grasp the definition of an adjective or a rule in arithmetic.

In a series of lessons on the Victoria Cross, after the student had described the Cross and told the story of Rorke's Drift, she associated the story with that of General Gordon, and led the pupils to see the grandeur of forgetting oneself in doing one's duty.

Step IV. Generalisation or Formulation. Now we come to the generalization; for language is necessary to help to fix and symbolize the general truth the child has been able to reach. In the Victoria Cross lessons, the children were all ready to suggest such generalizations as "We must face danger for the sake of duty." After listening to various formulations from the children, the teacher said they all had grasped the right idea, but she would give it to them in the words of an English poet:

"Not once or twice in our rough island-story,
The path of duty was the way of glory."

This summed up precisely what she had intended to convey in the lessons. She wrote the lines on the blackboard, and the children learned them. In this step the law, truth, or rule, having been clearly brought out by skilful questions, it is formulated in such a way that the whole group of details is expressed in this formulation. "Unless we formulate thought to ourselves in words, we are not, strictly speaking, thinking, but only striving to think, struggling with thought,—'licking,' as Montaigne says, 'the formless embryo.'"

Step V. Application.

After the formula is obtained the fifth step demands that it should be applied. We have arrived at our rule or principle, and the child must apply it. As Dr. Radestock says, "Children cannot be taught by maxims, which continually slip from their memory. Whatever we believe they must do, we should strengthen them in doing by unwearied practice, whenever the opportunity offers, and, if possible, create opportunities therefor."

After the formulation on the Victoria Cross lessons, the boys were asked to give instances in the ordinary school-boy life where worthy deeds might be done for the sake of duty; the instances given were numerous and interesting. The Victoria Cross lessons formed material for many a stimulating reference or association in later lessons.

Knowledge is a dead possession unless we can apply it to help us in our life and work. "Since the value of knowledge culminates in use," says De Garmo, "the

child should be held to a diligent use of its stock of ideas as rapidly as they are acquired, to go from the particular to the general, and back again from the general to the particular, to traverse his circle of ideas from a given standpoint in all directions, and to make use of the results reached for the solution of moral, theoretical, and practical questions." In this way the child's stock of ideas may be harmoniously blended, and his knowledge becomes a reliable personal possession.

These are the five steps through which every worthy piece of knowledge must pass before it becomes a part of the child's mental furniture.

It is obvious that with young children we cannot seek to generalize too broadly. Their instruction must often end with the acquisition of facts, for "their perceptions are neither sufficiently numerous nor complete to be basis of generalizations; therefore the process of abstraction as a whole is impossible to them."

I append a lesson worked through these five steps. It was prepared and given to a class of boys by one of the students of the Manchester Training College :—

THE PRINCIPLE OF THE INCLINED PLANE.

Boys 13 years of age.

Apparatus.—(1) Two planes, one smooth japanned and one rough wood.

(2) Light glass balls about 1 oz. each for weights.

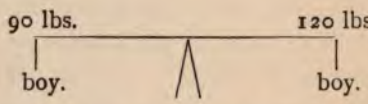
(3) Small spring balance weighing 4 oz.

(4) Small adjusted pulley.

Aim.—How does an inclined plane lessen the weight of an object?

(i.) *Preparation.*—

Problem, see-saw:



How can the weight of the two boys be adjusted?

Lead the boys to see the connexion between lengths and forces.

(ii). *Presentation.*—

1. Take the smooth plane and require a boy to measure the height it is raised—$3\frac{1}{2}$ inches.

The whole class enter this in their note-books in a column entitled "Height of plane."

2. A second boy weighs the two glass balls, resting on the plane at this height.

All enter the weight in a column in their note-books entitled "Force."

These experiments are continued with new heights. Thus:—

Height of Plane.			*Forces.*	
$3\frac{1}{2}$	inches.		$\frac{1}{3}$	ounce.
7	,,		$\frac{2}{3}$	,,
14	,,		$1\frac{1}{3}$	,,
21	,,	(vertical)	2	,,

The *length* of plane is found to be 21 inches.
The *weight* of balls ,, ,, 2 ounces.

Collect results:

Height $= \frac{1}{6}$ length of plane.
Force $= \frac{1}{6}$ of weight.
Weight $= \frac{1}{3}$ length of plane.
Force $= \frac{1}{3}$ of weight.

3. Why glass balls and a polished board are used?

Try experiments with the rougher board and show the effects of friction.

(iii.) *Association.*—Comparison of the plane used in the lesson, with instances furnished by the boys themselves; such as Drayman's ladder.

Sloping roads.

Heavy furniture raised into a second storey window.

Elicit the advantage of the incline, and compare with figures noted down, and show exactly what we mean when we say, "The incline is so much."

(iv.) *Formulation.*—Encourage the boys to express the idea as a rule, and accept the best attempt.

(v.) *Application.*—Give problems to be worked out, *e.g.*:

A man's strength in pushing is only equal to 120 lbs., he has to roll a cask of 240 lbs. upon a lurry 4 ft. from the ground. What is the shortest plank he can use, etc.?

The question of the formal steps is fully dealt with in a book written by Charles and Frank McMurray, entitled *The Method of the Recitation*, published in Bloomington, Illinois, U.S.A. This chapter is inadequate as a discussion of the whole problem, and readers are recommended to read more fully on the subject. Wiget's *Formalen Stufen des Unterrichts* is good for

CHAPTER XI

LESSONS WORKED OUT ACCORDING TO THE THEORY OF THE FORMAL STEPS

THESE lessons were prepared and given by the students of the Women's Training Department, the Owens College.

Series in Connexion with the Discovery of America

1. History Lessons of the Columbus Period.
2. Rotundity of the Earth.
3. Mathematical Geography.
4. Ocean Currents; Natural Science.

5. The Choice of Paris.

6. Robinson Crusoe.

7. Arithmetic in connexion with the Spanish Armada Series.

8. Drawing in connexion with the Spanish Armada Series.

9. The Walls and Gates of Rome. In connexion with a series of lessons on Roman History.

HISTORY LESSONS OF THE COLUMBUS SERIES.

Introductory Lessons.

METHOD WHOLE I. *Riches of the East.*

(To occupy two lessons).

LESSON I. (*a*). Early communications with the East.

Trace route of Solomon's ships.

1. Solomon had gold, silver, precious stones spices, peacocks and apes, etc., brought from Ophir [believed to be India (Ceylon)].

From what country would these products probably come? In what direction would Solomon send? From what point?



ROUTE OF SOLOMON'S SHIPS TO INDIA.

2. Alexander conquered North India and encouraged trade throughout his great dominions.

Over what country did Alexander rule?

Question the class on his ambition.

Show on map how he went on conquering further and further East. What made him try to gain India? What would be the result of his conquest?

3. The Romans succeeded to part of Alexander's Eastern Empire. In their time there was communication and trade between East and West.	Draw from the class that the Romans were rulers of Britain and of Palestine, etc., at the same time (also of the intervening lands).

What would be the result for the various parts of the Empire?



ALEXANDER'S CONQUESTS.

Did the Romans possess India? Show how they would hear about it, etc.

Did the Roman Empire continue?

Would there be so much trade and intercourse afterwards between East and West?

Recapitulate under the three headings—

1. Solomon. 2. Alexander. 3. Roman Empire.

1. Solomon had gold, silver, precious stones spices, peacocks and apes, etc., brought from Ophir [believed to be India (Ceylon)].

From what country would these products probably come? In what direction would Solomon send? From what point?



ROUTE OF SOLOMON'S SHIPS TO INDIA.

2. Alexander conquered North India and encouraged trade throughout his great dominions.

Over what country did Alexander rule?

Question the class on his ambition.

Show on map how he went on conquering further and further East. What made him try to gain India? What would be the result of his conquest?

(i.) *Preparation.*—Which way had Solomon's ships gone? How had Alexander marched to India? What difference would there be for the merchants? (Greater length of journey; no army, etc.)

(ii.) *Presentation.*—Which is cheaper, sending goods by land or by water?

∴ The merchants would choose to go as far as possible by water.

Different Routes.	*Disadvantages.*
1. Mediterranean by land to Euphrates, Persian Gulf, Arabian Sea.	Land journey from Mediterrean, and its difficulties.
2. Black Sea by land to Caspian, Oxus, Indus.	Very long route across difficult land.
3. By Red Sea (from Nile).	Was there any Suez Canal in those days? How must goods be taken to the sea? Desert journey with camels also a heavy tax.



THE ROUTES TO INDIA.

LESSON II. *Aim.*—What other possible ways were there of reaching India?

(i.) *Preparation.*—Draw from the class that the Italian merchants had gone East and South-East. Supposing a country further west than Italy wished to reach India, what direction might its merchants take?

(ii.) *Presentation:—*

1. Southern route round Africa. Point out on map— } Which country would be likely to attempt it? Disadvantages. Length of journey.

People's fears. Discuss the fears of the Equator.

People thought the water boiled there; region of fire.

Refer to the account of the torrid zone whence the Nile flowed, in *Hypatia.*

Show old maps giving fanciful details of unknown lands.

[Other quaint maps are to be found in Columbus's *Journal* (Hakluyt Society).]

2. Western route across the Atlantic (depending on the earth's being round). } What country might attempt this way? Describe beginnings of Portuguese adventurers.

Illustrate by stories of the terrors of the W. Ocean.

(See Washington Irving's *Life of Columbus*: Passage quoted from the Arabian *Xerif al Edrisi.* "The ocean encircles the ultimate bounds of the inhabited earth, and all beyond it is unknown. No one has been able to verify anything concerning it on account of its difficult and perilous navigation, its great obscurity, its profound depth and frequent tempests. [illegible] mighty fishes and its haughty wir [illegible]s in it, some

peopled, others inhabited. There is no mariner who dares to enter into its deep waters; or, if any have done so, they have merely kept along its coasts, fearful of departing from them. The waves of this ocean, although they roll as high



OLD ENGLISH MAP.

as mountains, yet maintain themselves without breaking; for if they broke, it would be impossible for ship to plough them."

Why were men so afraid of a voyage west? What was needed in order to attempt it?

(iii.) *Association.*—Summarise the various routes. Compare their difficulties. Draw out that the land journeys were *real* difficulties; the objection to the long sea voyage were fears of *imaginary* things, which would disappear with experience. So lead up to the Formulation.

(iv.) *Formulation.*—The best way of getting to India was by sea, if men could be found to attempt it.

METHOD WHOLE III. *Discovery of America by Columbus.*

Aim.—We are going to hear how at the end of the fifteenth century new land was discovered which greatly influenced the affairs of Europe.

(When the class repeat the aim let them note the three main points—time, event, result.)

LESSON I. *Special Aim.*—We are going to hear about the man who tried to reach India by sailing West.

(i.) *Preparation.*—What kind of man must he be? Why? Let class suggest from what country he might come. (Italy and Portugal, as noticed, specially interested in the matter.)

(ii.) *Presentation.*

1. Columbus' early life in Italy. Studies, etc. — What calling would he wish for? What would he need to learn?

2. Columbus in Portugal. First ideas of land to the west. — Why should he go to Portugal? Give details of the facts on which he based his conclusions that land lay West.

(1) His own theory "The Nature of Things."

(2) Books of Greeks and Arabians say round.

(3) Objects which had floated across from the West —trees, carved wood, dead bodies, stories of mariners.

3. Columbus' letters from Toscanelli. } Show how natural it was for Columbus to wish his theories corroborated by learned men.

Read extracts from the Toscanelli correspondence. (See *Journal of Columbus*, Hakluyt Society.)

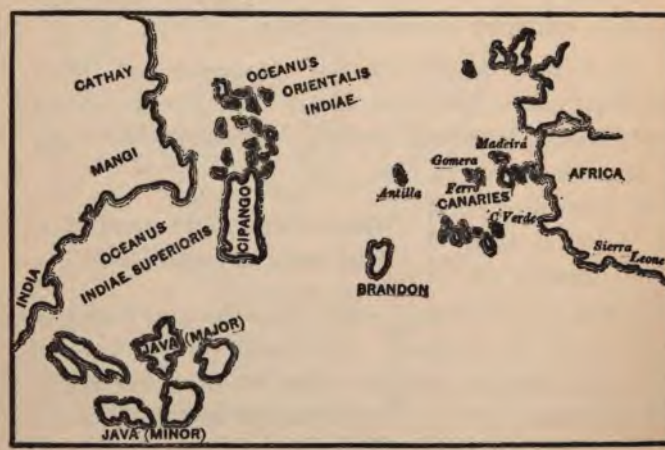
Points to be emphasized in the letters :—

(1) Belief in great riches—spices and jewels, etc.—

(2) Curiosity as to new forms of government, peoples, etc.

(3) Desire to do them good—make converts.

Toscanelli's map of the Atlantic (not now in existence, but has been restored from the minute descriptions given, and from an old map).



LESSON II.—We are going to hear what difficulties Columbus overcame before he was able to start on his voyage.

(i.) *Preparation.*—What would he need for his voyage? From whom could he get men, money, ships, etc.? Could Toscanelli give them? What *was* he able to give?

(ii.) *Presentation.*—Applications to various Courts.

(1) Portugal. Story of the deception practised on him. What would he then do?

(2) Genoa and England. Why no help was obtained. (Let the class suggest these places.)

(3) Spain.

(*a*) Ferdinand and Isabella very powerful. At war just then. — Would they have time or money just then? Still, would they wish the chance to pass to another country?

(*b*) Columbus at Salamanca. Discussions with the clergy. Great opposition. — Illustrate by picture. Contrast Spanish Cardinals with Toscanelli.

Bring out connexion better. Learning and the Church in Spain less freedom than in Italy. Let the class suggest what would be urged against Columbus' ideas. Great heat at the Equator, etc.

Describe his long waiting. Illustrate by extracts from the Columbus poems of Lowell and Tennyson.

What qualities in his character are brought out?

LESSON III.—We are going to hear how C
last set out on his voyage west.

(i.) *Preparation.*—After all this d
what would Columbus feel inclined
up his plans? What other course

(ii.) *Presentation.*

1. The Prior at Palos befriended Columbus, and got the Queen to listen to him. — Why was Palos a better place than Salamanca for gaining attention to such plans as those of Columbus?

2. The King's treasurer also took his part, and funds were obtained. — Would there be any difficulty now in getting ships, men, etc.?

3. The preparations at Palos, and setting out. — Show picture of the three ships (*Santa Maria*, *Pinta*, and *Niña*) found in Columbus' *Journal*.

Why were there delays in getting sailors?

Describe start from Palos; feelings of the crew, etc.

4. Voyage as far as the Canaries. — Would this be considered so formidable? Fairly well known, etc.

Extracts from Columbus' *Journal* to be read, describing the accident to the *Pinta's* rudder, putting in at The Canaries for repairs, provisions, water, etc.

LESSON IV.—We are going to hear how Columbus sailed across the Atlantic and discovered land in the west.

This lesson is to be taken chiefly from the *Journal of Columbus*, illustrated by map of the Atlantic.

(i.) *Preparation.*—Why should Columbus keep a journal? For whose benefit would it be? To what place did he think he was going? What had he to guide him?

(ii.) *Presentation.*—Read the beginning of the *Journal.*

I. Note two of Columbus' ambitions:—

(1) To get honours for himself and his descendants.

(2) To convert the barbarian kings and princes to his faith.

II. His intentions for the voyage :—

(1) To note what happened from day to day, and describe it at night in his *Journal*, and so "to forget sleep."

(2) To work at the business of navigation all day.

(3) To prepare a new chart showing all seas and lands.

What does this show us about his character.

III. Incidents of the voyage.

Falsification of the reckoning.

If sixty leagues had been made the Admiral put forty-eight (in order to make the voyage seem shorter).

Why should he do this? Let the children give their views on the rightness or wrongness of it.

Encouragements.—1. Lovely weather, "like April in Andalusia."

Flight of birds.

Tufts of grass coming from west.

Helped by the current.

Drizzling rain, no wind (sign of land near), etc.

Discouragements.—1. Variation of the compass. Now probably for the first time, observed that it pointed N.N.W., not due N.)

How would Columbus explain this?

2. Wind always in one direction, favourable. Why should this alarm them? (How to home.)

Rest of voyage to be taken in same way.

Note especially reference to the weed sailed through. Murmurings of the sailors—Columbus like Moses. Finally almost a mutiny, the day before land was sighted.

Last signs of land. Pole worked with iron; cane; land plant; board; branch of berries.

How Rodrigo de Triana first saw land.

LESSON V. *Aim.*—What sort of land did Columbus discover?

i. *Preparation*:—What would be the feelings of Columbus and his crew?
What would they do first? etc.
To whom was this new land to belong?

ii. *Presentation*:—

I. The landing in San Salvador. — Describe the landing. Appearance and feeling of the natives. How would the new-comers treat them?

II. Exploration of the nearer islands. — Would Columbus stay in San Salvador? Where did he think he had arrived? What products did he expect to find?

[Desire for gold as evidence of having reached India. Describe presents of bells, etc., to natives. Point out islands explored and named; character and treatment of natives.]

III. Exploration of Cuba and Hayti. — Explain that Columbus still thought this island was Cipango, then Cathay.

[Describe the hospitality of the Caciques; the innocence and happiness of the people—a sort of Golden Age.]

IV. Shipwreck in Hayti, building of a fortress with the wreck for part of the crew, while Columbus returned to Spain with the news.

Draw from the class that the beauty of the land would make some desirous to settle there. What would the wreck suggest? Would Columbus wish to stay? Describe briefly his voyage home, How would his news be received in Spain?

An indefinite number of lessons might still be given relating future discoveries, expansions of power, and settlement, etc. This would depend on the time to be devoted to the scheme, and the precise scope of the aim. The discovery has been followed out far enough to admit of a conclusion being suggested.

LESSON VI. *Aim.*—Results of Columbus' discovery, and what we may learn from it.

i. *Preparation*:—Question generally on results *expected*, efforts of the discoverers, and their importance.

ii. *Presentation*:—

I. Development of the Discovery.

Show, by the help of the map, how the Spaniards naturally spread to the mainland. Which parts would be settled first? When would people first become aware that they were not in the Far

East? Then what would they call their discovery? (New World.)

II. Effects on Europe.

Question on—1. Material use of the discovery.

2. Effect on men's minds.

3. Special effect on Spain and the other western countries of Europe. Show how future rivalries were natural.

Connect with the *Hiawatha* lessons—"All the land was full of people . . . *speaking many tongues.*" What does this show?

III. Effect on the natives:—

Connect with *Hiawatha's Vision.*

In what state did Hiawatha see his countrymen? Present state of American Indians.

How did Columbus treat the natives?

His good intentions and aspirations afterwards obscured by too great zeal.

[Let the children grasp the tragic side to the great discovery.]

These results more concisely put may be taken as the Formulation. It seems, however, desirable that, considering the age of the children, the hero of the discovery, rather than its political importance, should be dwelt upon in conclusion as a means of conveying ethical teaching.

iii. *Association*:—Bring out, by questioning, the qualities shown by Columbus in his great work.

(*a*) Courage, enterprise, curiosity.

(*b*) Patience in working out his plans, and waiting for their fulfilment.

(*c*) Hard work and faith in carrying out his plans, and forbearance with his weaker followers.

[Let the class give instances of these, noting the three periods of Columbus' life treated of. Now compare with other great men, explorers, etc. Alexander (in some aspects) in his Eastern settlements, Julius Cæsar, in Gaul, may be employed. Moses (Columbus' own comparison). Read passage from the *Journal* again].

Analogy seen in—Waiting patiently.
Faith in Mission.
Forbearance with followers.

Both leading people to a "Promised Land."
Great results from each.

iv. *Formulation*:—This should be obtained from the class after summing up the points in the Association, and noting what kind of men have shown such qualities. When condensed it may read: A great work requires a hero who will give his life to it.

Application.—Longfellow's verse, "Lives of great men," etc., may be used as an illustration. Draw out the personal lessons to be learned. Let the children talk about what they would like to be, and help them to notice.

(1) Benefit to ourselves in admiring and learning about great men.

(2) How to be of service, not a hindrance to them.

The Rotundity of the Earth.

General Aim.—Did Columbus form his plans correctly?

I. *Preparation.*—Why was he forming plans? He wanted to get to India.

In what direction does India lie with regard to Europe? It lies East.

Why did he sail West? He had heard from Greek and Arabian books, and he knew from his own observations, that land lay West. He thought the earth must be a sphere.

II. *Presentation.*—Columbus had also been told by a clever man named Toscanelli that the earth was round.

Toscanelli's Letter. Extract from letter to Martius enclosed to Columbus by Toscanelli.

"I have already spoken with you respecting a shorter way to the place of spices, than that which you take by Guinea by means of maritime navigation. The most serene king now seeks from me some statement, or rather a demonstration to the eye by which the slightly learned may take in and understand that way. I know this can be shown from the spherical shape of the earth, yet to make the comprehension of it easier, and to facilitate the work, I have determined to show that way by means of a sailing chart."

(Simple sketch of chart sketched on blackboard. Coasts, islands, and calling-stations pointed out.)

Letter Continued. "You must not be surprised if I call the parts West when they usually call them East, because to those always sailing West, those parts are found by navigation on the under side of the earth. But if by

land and by the upper side, they will always be found to the East."

Explanation and illustrations of this by means of a large globe of the earth.

Second Letter. "I perceive your magnificent and grand desire to navigate from the parts of the East to the West, in the way that was set forth in the letter that I sent you, and which will be better demonstrated on a round sphere. It pleases me much that I should be well understood, for the said voyage is not only possible, but it is true and certain to be honourable, and to yield incalculable profit and very great fame among all Christians. But you cannot know this save through experience and practice as I have had, in the form of most copious and good and true information from distinguished men of great learning, who have come from the said parts."

Recapitulation.—Toscanelli believed the earth to be a sphere.

LESSON II. *Aim.*—Was Toscanelli right in thinking the earth is a sphere?

Preparation.—Require the pupils to give the reasons of Columbus and Toscanelli for thinking the earth was a sphere.

Let them quote from their literature Tennyson's "Columbus," the lines—

> "Could it be
> That trees grew downward, rain fell upward, men
> Walk'd like the fly on ceilings?"

Presentation.—(*a*) Roughly sketch curved surfaces on blackboard.



Observations.—Objects on a curved surface (Fig. 1) are hidden from each other, or partly hidden as in Fig. 2.

Sketch. — (*b*) Showing that the body of the ship disappears first.



Observations.—

1. The whole of the near ships are visible.
2. Only the masts of the distant ships are visible.

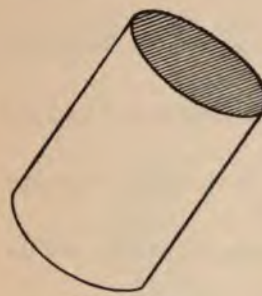
Recapitulation. — The surface of the earth is curved, hence the hull of ships disappear first in the distance.

(*c*) Show map of the world and trace the course of Magellan's voyage made in 1520. Magellan sailed west, round the South of America, across the Pacific to Asia, and thence back again to Europe.

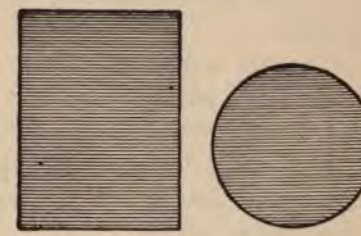
Recapitulation. — The earth must be round in one direction or Magellan could not sail round it.

(*d*) *The Earth's Shadow.*—This is sometimes cast upon the moon and it is always round.

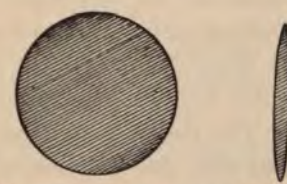
Bodies which cast a round shadow—*a*, cylinder; *b*, disc; *c*, sphere.



CYLINDER.



SHADOWS CAST BY A CYLINDER.



SHADOWS CAST BY A DISC.

The shadow cast by a sphere is always round. Tnese shadows are illustrated by a candle, a white sheet of paper, and the three bodies—cylinder, disc, and sphere.

Recapitulation.—The shadow cast by a sphere is always round, the shadows cast by a cylinder and disc are various.

III. *Association.*—Sum up the evidence and discuss it.

(*a*) Objects disappear from sight on curved surfaces.

(*b*) The masts of ships remain visible when the hull has disappeared from view, hence earth is curved.

(*c*) Magellan sailed round the earth, hence it is round in one direction.

(*d*) The earth always casts a round shadow, hence it is a sphere.

Compare and associate these conclusions, and lead the pupils to the generalization.

IV. *Generalization.*—The earth is a sphere, therefore Columbus and Toscanelli were right.

Later the class studied the geography of America and the West Indian Islands.

Mathematical Geography.

A series of lessons on the measurements of the earth, its motions, its position with regard to the Sun, Latitude, Longitude, use of Ships' Compass, use of Sextant Chronometer, Maps, Charts, form suitable lessons in connexion with Columbus. The simple charts and instruments he used are compared with the instruments in use in the present day, and his slight astronomical, mathematical, and geographical knowledge compared with the fuller knowledge of our own times.

Aim.—How can a sea captain or a sailor find the position of his ship at sea?

I. *Preparation.*—Shape of the Earth. A sphere.

It rotates from West to East.

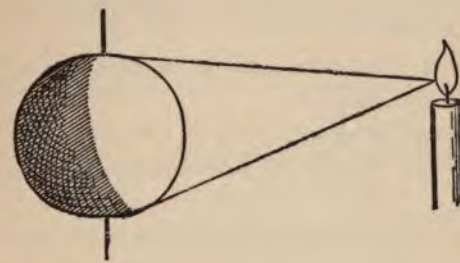
It completes a rotation in twenty-four hours.

The earth is divided into 360° longitude.

The children gave these facts readily from their knowledge gained in previous lessons.

II. *Presentation.*—(*a*) Light a candle and hold an orange on a knitting-needle before it so that the light falls on it.

Half of it is in the full glare and half in the shade.



The candle represents the sun, the orange the earth. The part in the glare represents daylight, the part in the shade night.

Which part is having noon? The part exactly opposite the light.

Cause the orange to rotate, and the pupils will observe that various parts of the earth have noon at different times.

Recapitulate.—Various parts of the earth have noon at different times.

(*b*) Mark the meridian of Greenwich, and cause the orange to revolve as the earth revolves on its axis, and require the pupils to notice whether the eastern or western portion has its noon first.

Recapitulate.—Places West of Greenwich have their noon later than places East of Greenwich.

(*c*) *Exact difference in time.*—If it takes the earth 24 hours to rotate through the 360 degrees, how long will it take the earth to rotate through 1 degree?

$$\frac{24 \text{ hrs.}}{360} = \frac{1440 \text{ min.}}{360} = 4 \text{ minutes.}$$

Recapitulation.—One degree of longitude is equal to four minutes in time.

(*d*) What will be the time at Bordeaux when it is 12 o'clock at Greenwich?

Position of Bordeaux, West of Greenwich (refer to the map). Being West it will have its noon later than Greenwich.

Bordeaux is 1° West of Greenwich, therefore it will be 11.56 at Bordeaux when it is 12 o'clock at Greenwich.

Problems.—What time is it at Genoa when it is 12 o'clock at London?

What time is it at New York when it is 12 o'clock at Greenwich?

What time is it at Greenwich when it is 4 o'clock at Bombay?

(*e*) Examine places near the same meridian.

Examples found on the map by pupils :—

London and Timbucktu.
Pekin and Perth in Australia.
Berlin and Capetown.

Recapitulation.—Places on the same meridian have noon at the same time.

General recapitulation of the matter in presentation.

III. *Association.*—Associate with knowledge of previous lessons on Latitude, method of finding the time by

observing the altitude of the sun, use of Chronometer and Sextant.

How can we discover the time of a certain place? By knowing the longitude.

How can a sailor find the longitude? By knowing the Greenwich time and comparing with the ship's time.

How can a sailor know the Greenwich time? By consulting a chronometer.

How can he find the ship's time? By observing the altitude of the sun.

Why is a knowledge of longitude not enough to fix the position of the ship? Longitude only shows how far the ship is East or West of a given point. Pekin and Perth in Australia are in the same longitude.

What fixes its position North or South of Equator? Latitude.

How does the sailor find his latitude? By discovering the sun's altitude, and by consulting a Nautical Almanack.

Having found his longitude and latitude what must he do further? Consult his chart or map.

IV. *Generalization.*—The exact position of a ship may be discovered by obtaining a correct observation of the longitude and latitude, and finding the exact point on a map or chart.

Application.—A number of problems bearing upon a knowledge of latitude, longitude, and arithmetic were given to be solved.

Natural Science.

Ocean Currents.

Aim.—How were the objects, which made Columbus decide there was land to the West, carried to the Eastern Atlantic?

Preparation.—Why did Columbus sail West? He hoped to find land. Why did he think there was land westward? Various objects had been found in the Eastern Atlantic which he thought had drifted from the West. Mention the objects. (*a*) Pieces of carved wood were found by a Portuguese pilot in the seas west of Portugal. (*b*) Reeds and trees were cast up on the western shores of the Azores. (*c*) The bodies of two men of an unknown race drifted on to the island of Flores.

Require the pupils to quote from their literature Tennyson's "Columbus," lines indicating the approach of land.

> "Still westward, and the weedy seas—at length
> The landbird, and the branch with berries on it,
> The carven staff."

Had Columbus any other reason for thinking there was land westward?

He had read accounts of it in old books.

Recapitulation of Preparation.

Presentation.—1. How were these objects carried? By the waves? Possibly, but not very likely. The motion of the waves is an up and down motion, which does not carry objects far.

Illustrations.—(*a*) Throw a match or cork into a large vessel of water. Disturb the water in order to produce a

wave-like motion, and require children to observe that the objects only move up and down.

(*b*) Take a long piece of stout cord, attach it to a hook in the wall, and by a sudden movement make it form of a series of undulating waves, thus :



Keep it in motion by moving the end, and show that the motion is simply an up and down motion.

(*c*) Refer to a field of wheat in the wind. It has the appearance of a series of waves, whereas there is only the up and down motion.

Recapitulation.—The *simple wave-motion is an up and down motion.*

2. The objects might have been carried by ships. That is not likely. The Atlantic was unexplored, except around the coasts.

Think of the river Mersey at Old Trafford, and the canal opposite to it. Now suppose we threw a block of wood into each, which would move the more quickly? The block in the river Mersey. Why? Because a river has a natural current, which a canal has not.

Can you think of anything in the ocean similar to rivers on land? Currents.

Then if the objects got into a current, they might very easily be carried a long distance.

Compare in a very elementary way a land river and an ocean current, and distinguish between them.

Recapitulation.—The objects may have been carried by ocean currents.

LESSON II. *Aim.*—How are ocean currents caused?

Preparation.—How were the objects probably carried to the Eastern Atlantic?

Recapitulate the previous Lesson.

Presentation. — Apparatus required: Flasks, beakers, small pair of bellows, a marble, a cork and piece of slate pencil, bunsen burner, ice, small pieces of blotting paper, map on Mercator's projections, vessel of water.

1. *Experiments.*—(*a*) Blow steadily over the surface of the water with the bellows. What happens to the water? It moves. What makes it move? The wind from the bellows. Therefore, wind blowing over the water of the ocean causes it to move.

(*b*) Blow in sudden gusts over the surface of the water. It still moves, but in jerks; no current could be caused by it, therefore the wind must blow steadily in order to produce a current.

Blow steadily, but in different directions. The water moves, but no current could be produced this way.

Recapitulate.—The wind must blow *steadily*, *continuously*, and in *one* direction only to produce a current.

2. *Experiments.*—Drop { a marble, / a slate pencil, / a cork, / a piece of wood, } one after another into the water. What happens? The marble and slate pencil sink, the cork and piece of wood float. (*Recapitulate.*—Some objects float on water and some sink).

3. *Experiment.*—A flask of water filled up to a certain

mark was weighed at the beginning of the lesson. It weighed 1 lb. This flask was heated and is now shown. Children observe that the water has risen higher than the mark. How much will it weigh? Pour water out until it again stands at the mark. How much does it weigh now? Less than 1 lb.

What can you infer about heated water?

What will happen if heated water is put into a flask of cold water?

Recapitulation.—Heated water occupies more space, and is lighter than cold water.

4. *Experiments.*—Sketch diagram, showing flask of water with a lamp underneath.

Children will readily state that the water at the bottom will become heated and rise to the top of the flask, and the colder water at the top will sink down to take its place.

Show actual experiment with tiny pieces of blotting-paper in the bottom of the flask. The blotting-paper rises to the top as the water becomes heated.

Put a piece of ice at the top of the water. The pieces of blotting-paper gradually sink.

Recapitulation.—Currents are caused in the flask by having water at different temperatures.

Association.—Refer to the ocean. Show that winds blow steadily, continuously, and in one direction in certain parts of the ocean.

Refer also to the inequalities of temperature at the Equator and the Poles.

By a series of questions lead the children to the Formulation.

Formulation.—The objects Columbus saw were carried

by ocean currents, which are caused by winds and by the unequal heating of the water.

Application.—Refer to a map and point out the North Equatorial Current, caused by the North-east Trade Wind, and the South Equatorial Current, produced by the South-east Trade Wind. Require children to draw diagrams of these. Refer to map, and draw attention to the Gulf Stream and Polar under-currents, caused by inequality of temperature. Require children to draw diagrams.

(The Association may require a whole lesson, and the Application may require two lessons, to work through it thoroughly.)

The Choice of Paris.

(*Story for children six years old.*)

Aim.—How a Prince had to choose one of three gifts—to be very great, or very wise, or to have the most beautiful lady in the world for his wife.

Preparation.—What people are very great?

What would the Prince have been called if he had chosen that gift?

Why do some people want to be very wise?

Which gift seems the most pleasant?

Could *any one* offer such gifts? How it came about.

Presentation—

I. *The Banquet of the Gods.*

Once upon a time all the gods and goddesses went to a wedding feast. They wanted every one to be very happy and kind to every one else; but there was one goddess,

called the "Goddess of Discord," who was always stirring up quarrels.

Would she be wanted at the feast?

What might they do to keep her away?

Take the children's suggestions.

But she found out about the feast, and how would she feel then?

So she came to the banquet-hall, without being invited, bent upon making the others quarrel; and she brought with her a golden apple, with these words on it, "For the most beautiful." Then she threw it upon the table among the gods and goddesses.

What would happen now?

Who would want it?

Could they all have it?

Whose fault had caused all the quarrel?

II. *How Paris was made the Umpire.*

Now there were three goddesses who had the most claim to the golden apple.

One was Juno, the Queen of Heaven, the wife of Jupiter; the second was Minerva, the Goddess of Wisdom; and the third was Venus, the Goddess of Beauty.

Show pictures, etc., of the three goddesses.

Why did Juno think she ought to have the apple?

Why did Minerva think so? (She said that wisdom was the most beautiful thing.)

Why did Venus claim it?

None of them would give way, so what would they have to do?

There was a beautiful young shepherd called Paris, living on a mountain. He was a king's son, but the shep-

herds had brought him up, and he was so beautiful that he was fixed upon to choose among the three goddesses.

How would he be able to see them?

III. *The Choice of Paris.*

One day the goddesses came to Paris's mountain, Mount Ida, so that he might judge among them, and give the golden apple to the one he chose.

But the goddesses were all so eager for the apple, that they would do anything to get it.

What might each one do to make Paris choose her?

Now Juno was the queen of the gods and goddesses. Which gift would she offer?

Show how she might make Paris a great king.

What would Minerva offer?

Venus was the Goddess of Beauty. What could she give? Paris *was* very beautiful already. She promised him the most beautiful wife.

Discuss the three offered gifts, showing what each meant.

Which should Paris have chosen?

Yet he threw the golden apple to Venus, choosing her gift. Then Juno and Minerva went away in great anger, and were no longer friends to Paris. And Venus helped him to get the most beautiful lady in the world for his wife; but she was already married to a Greek king.

What would Paris have to do? How would the Greeks feel? Show how this led to a great war. Had Paris really chosen well?

Association.—Compare with Solomon's choice of wisdom, in order to lead up to the *Formulation* that it is better to be wise and good than to have all that we wish for, however beautiful.

Application.—Let the children see how the lesson can be applied to their own circumstances, and to other stories.

Robinson Crusoe.

Aim.—How did Robinson make his house?

Preparation.—Where did Robinson keep his things? In a tent. Why was that not safe? When the rain came, he would get wet. Wild beasts could get at him. Savages might easily find him.

What could he make a house of? He could cut down trees and get wood. He might build one with stones. He might dig a hole in the earth. He might find a cave.

What must be his first care? To keep himself safe from wild beasts and savages.

Then what would be the best kind of a house? A hole covered over with trees, or a cave covered over with sea-weed.

Presentation.—I. Robinson takes a walk and looks for a good place, and after a while he finds a cave, which he thinks will do. What kind of a cave must it be?

1. It must be large, because it has to hold all his things.
2. It must be dry.
3. It must be well sheltered to keep out the rain.
4. It must face the sun to give him light and warmth.
5. It must be covered with weeds or trees in order to hide it.
6. It must be high up and safe from wild beasts.

(All these answers were received from the children.)

What harm would the rain do?

The rain would wet him and give him a cold. The rain would spoil his biscuits and gunpowder.

Recapitulation.—Robinson found a cave which was large, dry, well-sheltered, sunny in the mornings, and hidden by trees.

II. What would Robinson do first?

He would move all his things out of the tent. Yes, that took him several days; then he moved the tent, for he wished to put it up near his cave to form a kind of summer-house.

How do you think he began to make his house?

Perhaps he made a fireplace, perhaps he made furniture, perhaps he made a garden.

No; he did not do any of these things; he began with making a fence because he wanted to be quite shut in and quite safe; and there was a beautiful piece of green grass around his cave which he wished to enclose as a yard.

How do you think he made the fence?

He might make it of posts of wood. Of bushes, of stones.

He wanted to have a very strong fence in order that no savage men or wild beasts could get in, so he made a bank all round his yard first of earth and stones; then he got strong trees and placed them around. He twisted ropes and branches in and out to strengthen it, and after several days' hard work he had made a strong high fence.

Recapitulate.

III. Now what would Robinson make next?

A door, a gate.

He did not make either; he thought it would be safer without. How could he get out and in? He could climb

the fence. That would be difficult. He could make a ladder.

Yes; he made a rope ladder, and when he went outside the fence he hid the ladder, and when he came inside he took it with him into the cave.

Recapitulate.

This is one of the lessons on Robinson. It is impossible to go through the five steps in one lesson. The formulation the teacher had in mind was "God helps those who help themselves," and after a series of lessons which depicted Robinson bravely overcoming difficulties, she arrived at this maxim.

After this lesson the model was made. The teacher built up the rocks to form the cave, and the children twisted the fence of sticks and soft branches. They also made the ladder of string, and afterwards made the cabin which was described in the succeeding lesson.

A series of object-lessons on the dwellings of man were interesting at this stage. It was pointed out that Robinson had lived in a house, a ship, and in a tree when he was first shipwrecked. Afterwards he lived in a tent and in a cave. This led to lessons on tent-dwelling people and cave-dwelling people. The children's knowledge of Bible was utilized in describing the people who dwelt in tents.

Arithmetic.

The *rule of Proportion* in connection with the Armada Series.

Problem stated.—If the cost of provisions, for one day, for the 240 men in the "Revenge" was £8 5*s.* 0*d.*, how much would it cost for the 420 men of the "Ark"?

As these figures were actually taken from the State papers of the time of the Armada, the children showed the keenest interest in the Arithmetic. It became a living reality to them.

Preparation.—Question as to how to obtain result. We might find how much one man cost per day, and multiply by 420; but this is a long, round-about method.

Give the different steps in working.

1. Compare numbers of the two crews.

240 compared with 420.

Children point out that

$240 = 4 \times 60$, while $420 = 7 \times 60$

$\therefore 420 = \frac{7}{4}$ of 240;

or, $240 = \frac{4}{7}$ of 420.

2. Make the sum needed as many times as large for the second crew as it is increased above the first crew, *i.e.*—

If 240 men cost £8 5*s.* 0*d.*,

420 or $\frac{7}{4}$ of 240 cost £8 5*s.* 0*d.* $\times \frac{7}{4}$.

Let the class work out the result.

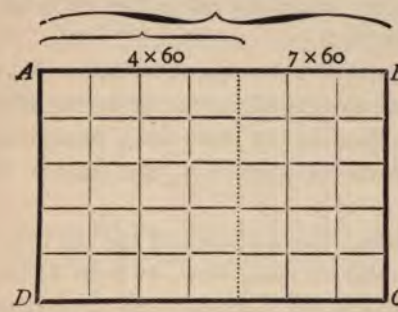
£8 5*s.* 0*d.* $\times 7$

£57 15*s.* 0*d.* $\div 4$

£14 8*s.* 9*d.*

This is a mere recapitulation of a previous lesson.

Presentation. —Show the class the relation between $\overset{240}{(4 \times 60)}$ and $\overset{420}{(7 \times 60)}$.



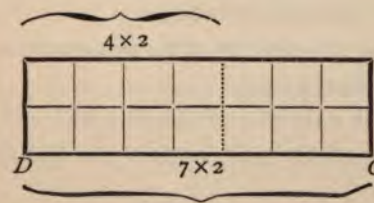
This enables the class to verify the statement that 240 is $\frac{4}{7}$ of 420, or that 420 is $\frac{7}{4}$ of 240.

Let the class point out that £14 8*s.* 9*d.* is $\frac{7}{4}$ of £8 5*s.* 0*d.*, just as much as 420 is $\frac{7}{4}$ of 240.

Give diagram and show this.

For clearness, 8 may be compared with 14 at first.

$$8 = 4 \times 2. \quad 14 = 7 \times 2.$$



Give examples of similar fractional relations by diagrams and folded paper, showing that however the signs of the numbers composed may vary, the relation between them remains the same, *i.e.* one number is as many times as great as the other.

Examples.—1. A small strip of paper divided so that the smaller part is $\frac{4}{7}$ of the whole, or the larger part $\frac{7}{4}$.

2. A large strip similarly divided.

Require the children to notice that we have equal fractions in both cases.

Also illustrate with two sets of cubes.

Keep the two sets of cubes before the class, and by means of questioning and observation cause them to state that, though the numbers vary, the relation remains the same.

Point out that the statement of the children, "that one number remains as many times as great as the other, as before," is clumsy, and introduce the word *ratio* and show its meaning.

Recapitulation.—Ratio = the comparison of two numbers as to their size.

Association.—Lead the children, by skilful questioning, to correct their former statement of the mode of working the problem.

Formulation.—Lead the children to formulate the new method of working themselves.

1. Compare the numbers of the two crews, and see what is the ratio between them.

2. Make the ratio between the first sum and the second sum the same as the ratio between the first crew and the second crew.

Statement of these ratios :—

$$\frac{240}{420} = \frac{£8\ 5s.\ 0d.}{£14\ 8s.\ 9d.}$$

Application.—Work the following :—

If the cost of provisions for the crew were £33 0*s.* 0*d.* for 4 days, how much would it be for 10 days?

N.B.—When the rule was mastered, other problems relating to details of the Spanish Armada served as an application of the rule. The children were living, as it were, in the time of the Spanish Armada, and naturally all details relating to the period interested them.

Drawing Lesson.

This lesson is merely the application of a previous History lesson on English and Spanish Ships.

Lesson I.—A Spanish Ship.

Aim.—We are going to draw a Spanish ship.

Preparation.—Draw from children the differences between Spanish and English ships.

Spanish ships were lofty, heavy, and hard to manage; they were rowed by slaves. They did not carry many cannon, and they had more soldiers on board than sailors.

The English ships were as a rule smaller, more convenient, could move quicker, they carried more cannon, and they had more sailors than soldiers on board.

Directions.—The most important lines must be drawn first in fine, free, bold outline.

I. *Lines.*—First, the central vertical line for the centre of mainmast.

Second, the chief horizontal line.

Third, the central line of the stern.

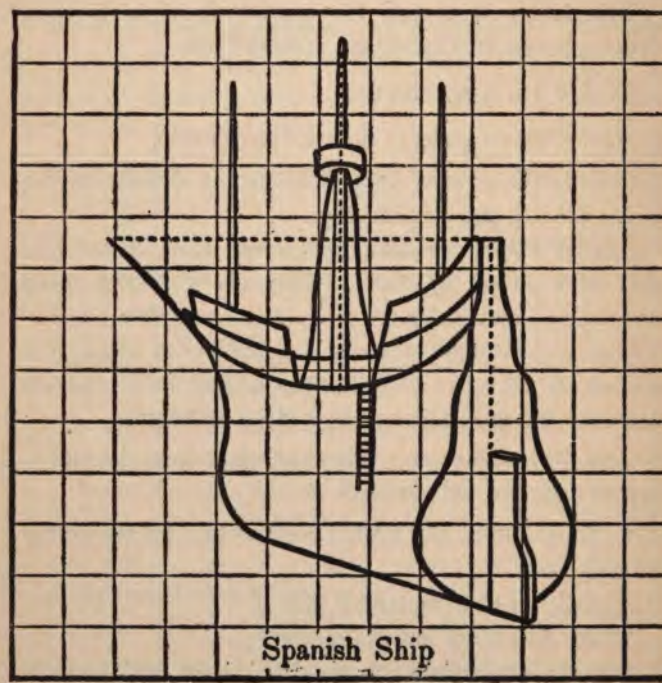
Teacher draws these on the blackboard.
work them the same time in their drawing b

II. *Outlines.*—Draw outlines of the stern, the hull, the high poop, and lastly, the masts, maintop, rudder and staircase.

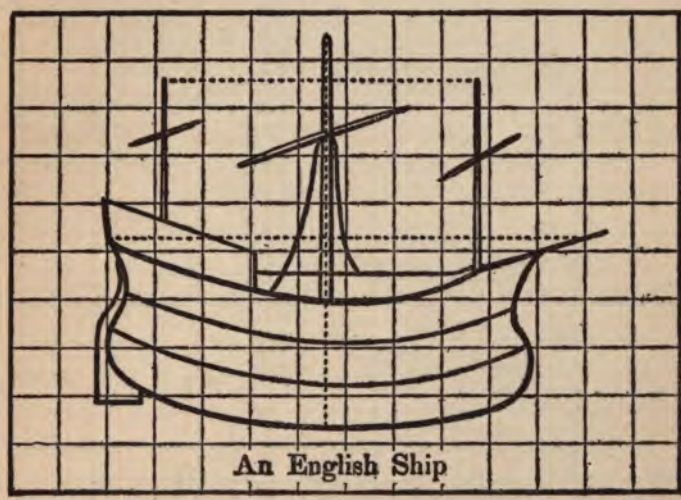
Discuss the drawing with the children during the working, and let them suggest what to do next.

LESSON II.—An English ship.

Follow the same general method in this lesson.



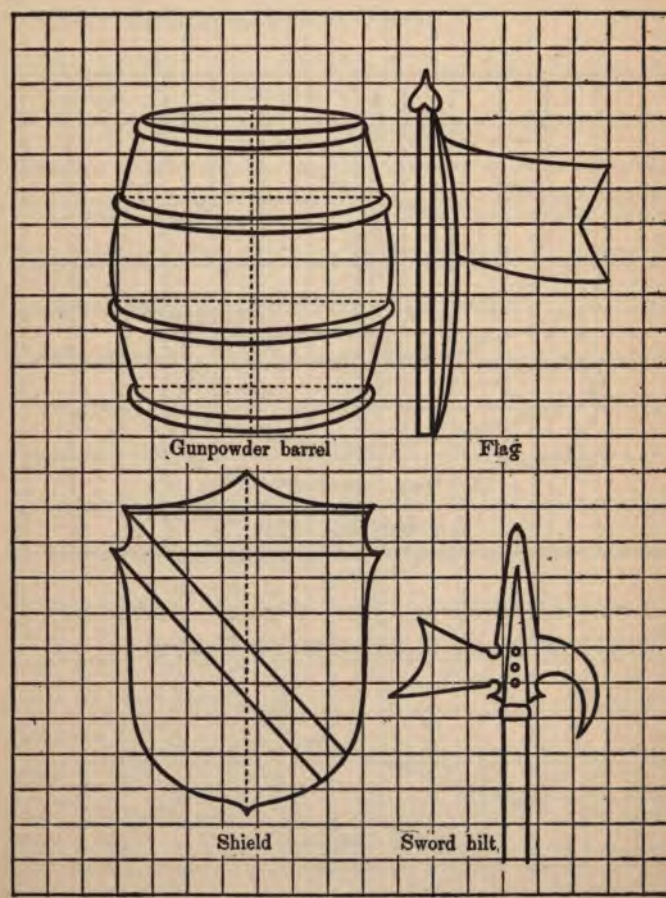
Spanish Ship



An English Ship

After the formal lessons were given the children were allowed to sketch the ships roughly from memory.

The following sketches were also drawn in connexion with this series, and various other objects which the children themselves suggested.



Notes of Lesson on the Walls and Gates of Rome.

This lesson was given in connexion with a series of Roman lessons. Macaulay's Ballads and Shakespeare's "Julius Cæsar" formed the literature of this series.

Standard VI.

Apparatus.—Black-board and chalks (coloured). Plan of Rome showing the walls. Gift VI. Model of Greek Temple. Blocks of wood and clamps.

Aim. How did the Romans build their walls and gates?

Matter.

Preparation. — The use of walls round the Roman city, and their respective builders.

Romulus, B.C. 753.
Servius, B.C. 578.
Aurelian, A.D. 271.

Method.

Question on the boundaries of Rome at different periods, and the use of walls, *e.g.*, How did the Romans fix the boundaries of their city? Why were walls used? When and by whom was first wall built? How much territory did it include? For how many years did this remain the boundary? What land was enclosed in second wall? By whom was the last wall built?

N.B. — Whilst questioning indicate the walls on the plan.

MATTER.

Presentation.—

(*a*) *Construction of Romulus' Wall.* B.C. 753.

Rough uncemented stones.

Spaces between large stones filled up with smaller ones.

Wall 50 ft. high, 12 ft. thick.

Three gates.

In building his wall Romulus first dug a furrow with his plough, and against the bank formed from the earth built his wall. This method both made the bank permanent and supported the wall.

Gates to be named merely, their construction to be described later.

METHOD.

Black-board Sketch.—

(*a*) Walls used as—

1. Boundaries;
2. Protection from enemies.

Recapitulation.—

Get suggestions from the class of the manner in which these only partially civilised people might build, by such questioning as: "With what materials would a modern builder provide himself?" Would the Romans have bricks and mortar at that time? Where do we sometimes see walls built without any cement?

At this point draw rough sketch of the wall.



Question on the necessity of having gates.

MATTER.

(*b*) *Wall of Servius.*

Progress in civilisation.

Stones cut to fit into each other.

Iron clamps used to fasten stones together.

Openings in wall arched.

Development of arch.

Thirty-seven gates.

METHOD.

Black-board.—

(*a*) *Romulus Wall.*

Rough, uncemented, three gates. Recapitulation.

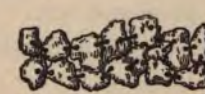
"In what way would Servius' wall be different from that of Romulus?"

Explain that curious holes are sometimes found in the stones of ancient buildings in Rome.

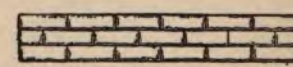


Explanation of this is that iron bands were used to fasten stones together, and have since been destroyed by action of the weather.

Illustrate method of using the clamps.



Tell the class that at various points in wall openings were made so that the inhabitants of the city might be

MATTER.	METHOD.
	able to see when danger was approaching. These openings, which before were simply of an irregular square or oblong shape, were now arched.
	
	Draw comparison between Romulus' and Servius' wall.
	Black-board.—
	(*b*) *Wall of Servius.*
	Cut stones and iron clamps.
	Arched openings.
	Thirty-seven gates. Recapitulation.
(*c*) *Wall of Aurelian.*	
Begun A.D. 271.	Question to bring out that the further advance in civilisation and the use of bricks and mortar.
Bricks and mortar used.	
Same as modern wall.	
Tiber crossed by eight bridges.	
Fourteen gates.	
	
	Require children to point out Aurelian's wall on the plan.

MATTER.

METHOD.

Black-board.—

(*c*) *Wall of Aurelian.*

Bricks. Fourteen gates. Recapitulation.

(*d*) *Gates.*—

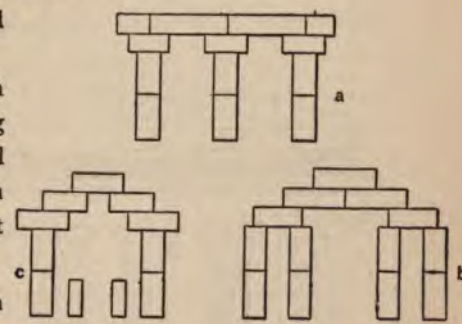
Three kinds.

(*a*) With two arches, one for entering, another for leaving the city—both used by carriages and foot passengers.

(*b*) One large arch for carriages entering and leaving city, and a small one on either side for foot passengers.

(*c*) One large arch for carriages with a passage on each side for foot passengers.

Illustrate the construction and build with Froebel's Gifts. Thus,—



Show a model of Greek temple, and encourage children to bring out contrasting points.

Association.—

Compare the Roman buildings with those of Greece, studied in previous lessons.

Formulation.—

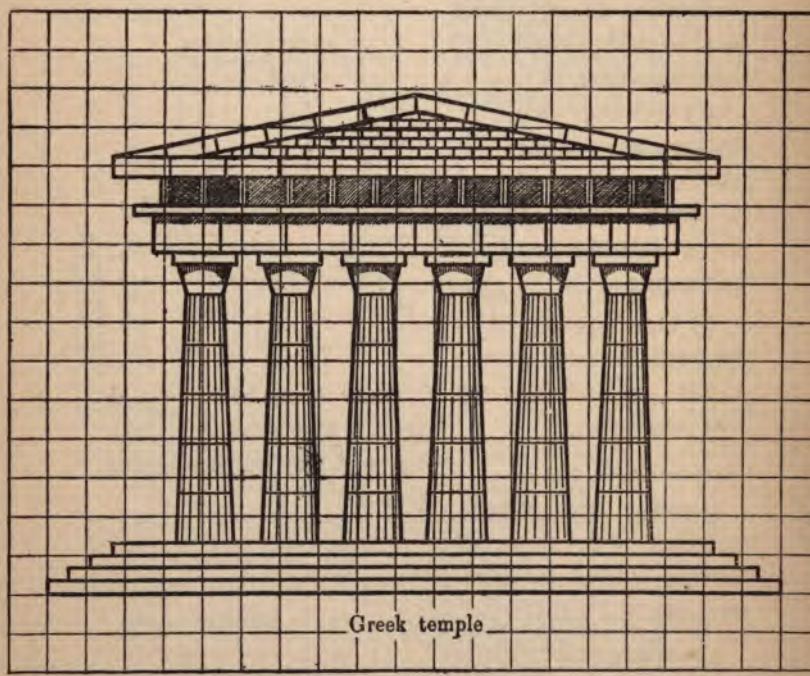
(*a*) Wall of Romulus. Rough, uncut and uncemented stones. Three gates. Square or oblong openings.

(*b*) Wall of Servius. Cut stones and iron clamps. Thirty-seven gates. Arched openings.

(*c*) Wall of Aurelian. Bricks and mortar. Fourteen gates.

(*d*) Gates. (*a*) Double arch.
(*b*) Large central arch and two side ones.
(*c*) Large arch with two narrow passages.

Application.—Drawing of walls and gates.
Drawing of the Greek temple.



Greek temple

The drawing of the Greek temple was followed by drawings of Roman arches in later lessons.

APPENDIX

HISTORIC SKETCH OF THE GROWTH OF HERBART'S INFLUENCE IN GERMANY

JOHN FRIEDERICH HERBART was born at Oldenburg in 1776. He died at Göttingen in 1841. At the age of eighteen he went to the University of Jena to study law. At this period Jena was the centre of German philosophic thought, and the young Herbart, following his natural inclinations, neglected his law studies and became an enthusiastic follower of Fichte, who had succeeded Rheinhold to the chair of philosophy in the Jena University.

During his second year of university life Herbart rejected the idealism of Fichte, and in his criticism of Schelling, written about this time, he lays the foundation of his own future philosophy. "I seek to determine a human being," he says, "by the laws of his reason and nature, and to give him that which will enable him to make something of himself."

He left Jena after three years, without completing his course, and became a private tutor to three boys in a Swiss family. While thus employed, he conceived some of the fundamental principles of his educational theories.

In 1799 he visited Pestalozzi in his school at Burgdorf, and was profoundly impressed by the old man's methods and aim. "I ... long held," he wrote, "that the sole

and genuine root of instruction is a feeling of clear comprehension. A perfect regularity in the sequence of studies, adapted to all requirements, was to me the ideal, which I looked upon as the omnipresent means of securing to all instruction its true efficacy. It was the discovery of this sequence, of this arrangement and co-ordination of what was to be learned contemporaneously and what consecutively, which formed, as I understand it, Pestalozzi's chief aim. His method is at least so far correct, that it rejected harmful superfluities. Its laconic brevity is its most essential merit. No useless word was heard in the school; thus the train of understanding was never interrupted. The teacher spoke steadily to the children, the wrong letters were immediately rubbed off the slate, so the child could never linger over his mistakes. There was no deviation from the true course, therefore every moment was one of progress."

After resigning his tutorship in 1799, Herbart spent two years in Bremen reading philosophy, in order to qualify himself for a university chair.

Some of the earliest of his writings bear upon educational questions. In 1802 he published his essay on Pestalozzi's new work, *How Gertrude Teaches Her Children* (*Wie Gertrud ihre Kinder lehrt*); and later, *Pestalozzi's Idea of an A B C of Observation* (*Pestalozzi's Idee eines A B C der Anschauung*). The latter invested the ideas of Pestalozzi with a more scientific form than the great Swiss educator could give them himself.

In 1802 Herbart went to Göttingen as a *privat-docent* in pedagogy, and began to lecture on ethics, philosophy and pedagogy. His lectures were so brilliant that soon the

whole philosophical life of Göttingen centred in his class-room.

He published a number of important books during his Göttingen period.

In 1804 the second edition of *Pestalozzi's Idea of an A B C of Observation* appeared, to which was added *The Moral Revelation of the World as the Chief Work of Education* (*Die aesthetische Darstellung der Welt als das Hauptgeschäft der Erziehung*). The main thought in this work is that the teacher can reveal to the pupils, through the medium of the ordinary branches of school instruction and school experience, the moral relations between the individual and his fellows, and by these means develop in the child a moral insight and good disposition. In the same year he also published his *Standpoint for Judging Pestalozzi's Method of Instruction* (*Standpunkt der Beurtheilung der Pestalozzischen Unterrichtsmethode*). Two years later appeared his chief educational work, *General Pedagogics* (*Allgemeine Pädagogik*), and later appeared *Chief Points of Metaphysics*, and *Chief Points of Logic* (*Hauptpunkte der Metaphysik*, and *Hauptpunkte der Logik*).

In 1808 he published his *General Practical Philosophy* (*Allgemeine praktische Philosophie*).

In 1809 Herbart was called to Königsberg to occupy the chair formerly held by Kant. "How happy I was," he writes, "to receive the offer of this most renowned chair of philosophy, the place which, when a boy, I longed for in reverential dreams, as I studied the works of the sage of Königsberg."

Herbart held that in education "theory and practice should go together"; and in Königsberg he was able to

establish a "Seminar" and practice-school in connection with his lectures. He writes: "I had the lectures on education very much at heart. But education cannot be merely taught; it must be demonstrated and practised, I long ago conceived the idea of teaching a small number of selected boys myself, for an hour daily, in the presence of some young men acquainted with my pedagogy, who will attempt in my place and under my eye to carry on what I have begun. Gradually in this way teachers may be trained, whose methods must be perfected by mutual observation and exchange of experience. Since a plan of instruction is worthless without teachers, and moreover such teachers as are inspired by the spirit of the plan and skilled in the use of the method, perhaps a small experimental school such as I propose will be the best preparation for future and more extended movements." The little practice-school thus established continued to exist for nearly a quarter of a century. The actual teaching in the school was always done by five or six young men, who were studying philosophy and pedagogy in the University. The relations between Herbart and these young teachers were friendly and intimate. He directed and criticised their work, and every year each teacher was required to write a report of his educational experiences and observations.

This little school was the first of its kind established in connection with theoretical lectures in a German university. The example Herbart set of combining practice with theory has been followed by several of his adherents in various German universities.

Psychology occupied Herbart during his Königsberg period. Pestalozzi, whose wonderful intuition and great

heart inspired him in teaching, failed to express himself in exact words for the guidance of others less gifted than himself. Again, in Pestalozzi's day there was no psychology upon which he could base his pedagogical system.

It remained for Herbart to develop a psychology, and to apply it to the practical problems of teaching. Professor James Ward, of Cambridge, says: "For exactness and penetration of thought, Herbart is quite on a level with Hume and Kant. We are most indebted to him for the enormous advance psychology has been enabled to make."

Among Herbart's psychological works are his *System of Psychology*, and his *Text-Book of Psychology*, compiled from his lectures. His chief psychological work, *Psychology as a Science Founded upon Experience, Metaphysics and Mathematics*, appeared in 1824–5.

Herbart returned to Göttingen in 1833, after twenty-four years of active work in Königsberg. During his second period in Göttingen, he published one important educational work, *Outline of Pedagogical Lectures* (*Umriss pädagogischer Vorlesungen*), but his time was chiefly occupied in preparing and giving lectures.

He died in 1841. He is buried in Göttingen. The marble cross marking his grave bears the inscription:

"To penetrate the sacred depths of Truth,
To strive in joyful hope for human weal
Was his life's aim;
Now his free spirit hath the perfect light,
Here rests his mortal frame." [1]

1 ...art). Translated by Felkin.

Practical Influence of Herbart's Work.

The Königsberg "Seminar" was closed when Herbart withdrew from the University, but the master's spirit lived, and still lives, among his disciples.

The two early pioneers, who have carried Herbart's theories into practice in German schools, were Karl Stoy and Tuiskon Ziller.

The Pedagogical "Seminar" of the University of Jena, under Dr. Rein, is the most active centre of Herbartian thought; at the present time, therefore, it may be interesting to trace its history. In 1836 Brzoska, one of Herbart's former teachers at Königsberg, published a pamphlet in Jena entitled, *The Necessity for a Pedagogical "Seminar" in the University.* (*Die Nothwendigkeit pädagogischer Seminare auf der Universität.*) This pamphlet attracted considerable attention, but the death of the author arrested the further development of the movement.

Karl Stoy, who had studied and taught under Herbart at Königsberg, and was full of enthusiasm for the furthering of Herbart's educational principles, came to Jena as *privat-docent* in 1842. He had proved his ability as a practical teacher, having previously worked in Bender's Educational Institute at Weinheim. He formed an educational society among his students, and revived the interest in the establishment of a Pedagogical "Seminar" which Brzoska's pamphlet had excited. Dr. Stoy was made professor of pedagogy at the University, and he established a "Seminar" and practice-school in connection with his work.

During forty years, with the exception of some time

spent in Heidelberg, Stoy continued his labours in Jena. His "Seminar" became a centre of pedagogical thought, and an inspiration to many who were afterwards famous for their educational work.

Stoy wrote many pedagogical books: *School and Life* (*Schule und Leben*), *Home Pedagogy* (*Hauspädagogik*), *House and School Government* (*Haus und Schulpolizei*), *Organization of Training Colleges* (*Organization des Lehrer-seminars*), and *Home Geography and Language Teaching* (*Heimatskunde und Sprachunterricht*). His chief work is his *Encyclopedia of Pedagogics.*

Stoy seized and vigorously expounded Herbart's doctrines, and he applied them chiefly to the work of primary schools, but he contributed little in the way of new ideas.

He accepted Herbart's psychology and ethics as the foundation of his educational system. He believed that the idea of historical development served as a guide for the selection of humanistic studies, and he held that the theory of the formal steps was the rational method of imparting knowledge, but he rejected the fairy tales and *Robinson Crusoe*, which other followers of Herbart consider to be the chief humanistic studies in the child's early years, and he refused to accept the scheme of concentration worked out by Ziller and others. On the death of Stoy, in 1885, Dr. Wilhelm Rein was called to the chair of pedagogy at Jena.

Tuiskon Ziller (1817–1883), after having studied philology at Leipsic, became a teacher in a secondary school at Meiningen. His experience as a teacher awakened in him a love for educational questions. He returned to Leipsic to qualify as *Privat-docent* in law, but his natural

inclinations led him, in 1856, to publish an essay, *Introduction to General Pedagogy* (*Einleitung in die allgemeine Pädagogik*).

This was followed by a treatise on *The Government of Children* (*Die Regierung der Kinder*).

This work called public attention to educational problems, and, with the help of sympathetic supporters, he established a "Seminar" and practice-school in Leipsic, similar to that of Herbart in Königsberg, and as professor of pedagogy directed the work of the students. Ziller's great work, *Basis of the Doctrine of Instruction as a Moral Force* (*Grundlegung zur Lehre vom erziehenden Unterricht*) was published in 1865.

This book roused considerable interest in Herbart, and led to the formation of a society for the study of Scientific Pedagogy. This society later consisted of hundreds of members in various parts of Germany, who formed themselves into local branches for the purpose of discussing educational questions from a Herbartian point of view.

Ziller's later works were *Lectures on General Pedagogy* (*Vorlesungen über allgemeine Pädagogik*) and *General Philosophical Ethics* (*Allgemeine philosophische Ethik*). Ziller died in 1883, and the Pedagogical "Seminar" at Leipsic came to an end.

Ziller was profoundly influenced by Herbart, and undoubtedly his fundamental principles are entirely in accord with those of his master; but he was a bold and original thinker, and he gave a free and independent interpretation to many of Herbart's ideas, which evoked the hostility of the more conservative of Herbart's adherents. Ziller's three questions are :—

How is the subject-matter of the school studies to be selected?

How are the studies to be connected?

What is the true method of instruction?

And the educational principles which underlie the solution of these questions are purely Herbartian. Ziller believed in the moral training of the child through instruction in the ordinary school subjects, and in the idea that the natural contents of the child's mind derived from his experience and intercourse and school instruction, furnish the only reliable guide to the selection and arrangement of his school studies, and in the necessity of developing in the child a permanent, far-reaching, and direct interest in the world and in humanity.

The freedom which Ziller allowed himself in applying Herbart's principles to the selection of subject-matter, and his method of connecting the subjects of study, were regarded with displeasure by the rigid followers of Herbart. Stoy wrote: "I have nothing to do with Ziller novelties. I look upon them as harmful exaggerations."

A year after the death of Stoy Dr. Wilhelm Rein was called to the chair of pedagogy in Jena. Professor Rein had studied pedagogy under Stoy in Jena, and under Ziller in Leipsic; afterwards he taught in Ziller's practice-school, and later he became Director of the Normal School at Eisenach. Under Dr. Rein's inspiring guidance interest in educational problems has been steadily increasing, and at the present time his Seminar in Jena is the most famous in Europe.

Of the seven hundred students at the Jena University one-tenth are enrolled under Dr. Rein. These students

are of all nationalities; even Japan is occasionally represented.

Prof. Rein is the real head of both the "Seminar" and practice-school, and there is a headmaster of the school who advises and criticises in the absence of the professor. Prof. Rein spends some time daily in the school, visiting the various classes and offering "suggestive and effective criticism" to the students. An American student thus describes his educational principles: "The 8 years' course of study used in the practice-school has been worked out in detail by Prof. Rein in accordance with his interpretation of the principles laid down by Herbart and developed by Ziller. The basis of this pedagogy is Herbart's ethics and psychology. Herbart's ethics, as presented by Professor Rein, is chiefly modern Christian socialism; in his lectures on psychology he presents a pedagogical application to the principles of psychology as developed by the followers of Herbart, Professor Wundt of Leipsic, and Professor Ziehen of Jena."

The entire course of study is published in a set of eight volumes entitled, *Theory and Practice of Instruction in the Primary School* (the eight school years), (*Theorie und Praxis des Volkschulunterrichtes—die acht Schuljahren*). These books were written by Dr. Rein and two of his colleagues. The first volume contains, as an introduction, Dr. Rein's general pedagogical principles.

The pedagogical "Seminar" is an organic part of the University, and receives an annual stipend from the State. The members of the "Seminar" may be of three kinds:—

I. Merely visiting students who attend the lectures of

the professor, and listen to any lessons they chose to hear in the practice-school.

II. Special members, who are expected to attend lectures and school classes, and to take an active part in the criticism of lessons, arranging school excursions, writing reports, etc.

III. Ordinary members, who participate in the entire activity of the Seminary, and in addition undertake to teach a subject in the school, for not less than a term, under the direction of the class teacher.

The three weekly meetings, which must be attended by all members of the "Seminar," are the Theoretikum Pratikum, and Conference.

The first is a meeting conducted by the professor, devoted to the discussion of special educational questions which have arisen in the school during the week.

The Pratikum is a specimen lesson given by a student as a typical illustration of his method, in the presence of his fellow-students, the teachers of the school, and the professor.

The Conference is a meeting held under the direction of the professor to discuss and criticise the student's lesson. The student is allowed to criticise himself first, after which an appointed critic gives a thorough criticism of the lesson; then disputed points are discussed. The American student before quoted, in describing one of these Conferences, writes: "After the questions have been argued an hour or more under Professor Rein's constant direction, he summarizes the results, often adds points which have been overlooked, and, along with candid and wholesome advice to the student under criticism, he passes his generally very just verdict upon the lesson. Criticism is Professor Rein's

strong point. Faults do not escape him, and he suggests their causes and remedies. The system of pedagogy he has studied and developed during twenty years of school work is his guide in solving questions of theory, and the ideal teacher he has in mind is the criterion he applies to practice. Those students who go through the whole ordeal of the Seminar find it sufficiently terrible; never is it a joke, though at times it has its humour."

When the serious business of the Conference is over, the evening ends in a truly German fashion with toasts and songs. My friend goes on to describe a student's toast to Dr. Rein. "He responds with a short, happy speech, which elicits cheer after cheer, until a word, directing thought to the earnestness of the life of a teacher, hushes his hearers into that silence which reigns when the innermost soul pays homage to the power touching it. Departing, he bids the assembly 'good-night,' to which the students respond by respectfully rising. There is not one of them who has not profited by the professor's concrete example as a critic. He operates with such expertness, giving his convincing reason for every slash of his knife, as he cuts away false practice, that the patient quite forgets the pain of the incisions, while gratefully anticipating the assured relief. The professor is a sincere man, who loves an honest word more than gold, who goes far out of his way to show others their path. He has the genius of being a simple man."

Dr. Rein has written a large number of educational works.

His *Outlines of Pedagogics* (*Pädagogik im Grundriss*), of which there is an English translation, contains a sketch of his educational principles.

His *Encyclopedia of Pedagogy* (*Encyclopädisches Handbuch der Pädagogik*), an extremely valuable work to the student of education.

Herbartian thought has considerably influenced the teaching in the schools of Middle Germany. In Eisenach there is an excellent school and training college conducted on Herbartian lines by Direktor Ackermann. I spent some weeks in this school two years ago. There were 241 pupils in the school and 31 students in the training college. The school has nine classes; in the ninth are little girls of six years of age, and in the first are girls of fifteen and sixteen years.

I append the subjects studied and the number of hours devoted to them in each class:—

Class.	Religion.	History.	German Language and Literature.	French.	English.	*Heimatkunde.	Geography.	Natural History.	Physics.	Arithmetic.	Writing.	Drawing.	Singing.	Needlework.	Gymnastics.	Total Number of Hours in Each Class.
I	2	2	4	5	4	–	1	1	2	2	–	2	2	2	–	29
II	3	2	4	4	3	–	2	2	1	2	–	2	2	2	2	31
III	2	2	4	4	3	–	2	2	–	3	–	2	2	2	2	30
IV	2	2	4	4	–	–	2	2	–	3	2	2	2	2	2	29
V	2	2	4	4	–	–	2	2	–	3	2	2	2	2	2	29
VI	2	2	4	4	–	–	–	2	–	3	2	2	2	2	2	29
VII	2	2	6	–	–	2	–	–	–	4	2	–	2	2	2	24
VIII	2	2	6	–	–	2	–	–	–	4	2	–	1	2	–	21
IX	–	2	5	–	–	2	–	–	–	3	3	–	1	–	–	16

* The Heimatkunde is home geography, a knowledge of the child's surroundings.

At Altenburg there is a thoroughly Herbartian High School for Girls directed by Dr. Karl Juste. There is also a large mixed primary school of one thousand children which is entirely Herbartian in character. Rektor Ufer is the director of this school. He is the author of an illuminating little work *Introduction to Herbart* (*Vorschule der Padägogik Herbarts*). Some of the finest Scripture and history lessons I have ever heard were given by Rektor Ufer and Dr. Juste in the Altenburg schools. In Weimar, Gotha, Karlsruhe, and other parts of Germany, and in Chur in Switzerland, there are Herbartian training colleges.

The Frankische Stiftung at Halle is profoundly influenced by Herbartian thought. Dr. Frick, the former Direktor, applied the Herbartian principles to secondary education in the various schools under his control. An interesting example of a country Herbartian school is the one in Blankenhaim under Rektor Scholz, author of *The School Journey as an Organized Part of Instruction* (*Die Schulreise als organisches Glied im Plane der Erziehungsschule*).

